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ABSTRACT

This proceedings contains 13 papers from the 1998 Research Symposium of the Coalition for Education in the Outdoors. Following a preface "Building the Research Foundations of Outdoor Education" (Karen M. Fox, Leo H. McAvoy, Anderson B. Young), the entries are: (1) "An Integrative Review of the Literature on Women in the Outdoors" (Karla A. Henderson, Nina S. Roberts); (2) "Factors Affecting the Personal and Social Outcomes of Organized Camping" (Marta K. Moorman); (3) "Self-Efficacy and Adventure Programs: Transferring Outcomes to Everyday Life" (Todd Paxton, Leo H. McAvoy); (4) Validity and Reliability of the Outdoor Education Practicum Questionnaire" (Thomas James Quinn); (5) "Outdoor Leader Self-Awareness and Its Relationship to Co-Leaders' Perceptions of Influence" (Mark C. Wagstaff); (6) "'A Sense of Competence': Re-conceptualizing Issues of Competence for Women in Outdoor Education" (T. A. Loeffler); (7) "Validating Predictors To Determine Optimal Adventure in Whitewater Kayaking" (Chris D. Jones, Steven J. Hollenhorst); (8) "Pitfalls To Avoid in Adventure Education Outcome Research" (Jim Sibthorp); (9) "Efficacy of a TR Self-Esteem Program for Adolescents with Emotional Disturbances in a Treatment Setting" (Ramon B. Zabriskie); (10) "Learning Outdoor Recreation Skills in a Safe Place: Lessons from a Single-Sex Program" (Deb Jordan); (11) "Evaluating Short Term and Long Term Retention of Experiences Associated with an Interpretive School Field Trip" (Jim Sibthorp, Doug Knapp); (12) "Controversial Issues in Adventure Education" (Tom G. Potter, Scott Wurdinger); and (13) "The Future of Research in Outdoor Education" (Simon Priest). (Contains references in each paper.) (SV)



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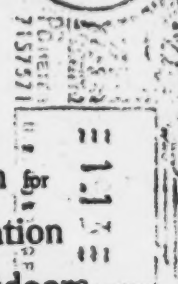
COALITION FOR EDUCATION IN THE OUTDOORS FOURTH RESEARCH SYMPOSIUM PROCEEDINGS

JANUARY 9-11, 1998
BRADFORD WOODS, INDIANA

Karen M. Fox
Pamela E. Foti
Leo H. McAvoy
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Editors



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The Coalition for Education in the Outdoors initiated a Research Task Force in 1990 with the purpose of supporting the conduct of research in the field and the dissemination of the results. The symposium at Bradford Woods and these proceedings offer evidence of the success of this task force. At the first symposium in 1992, there was general agreement that the symposium be a regular occurrence. The 1994, 1996, and 1998 Symposia and these *Proceedings* are indicators of the Coalition's continued support of research in outdoor education. Information on future events will be available through the Coalition office.

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**COALITION FOR EDUCATION IN THE OUTDOORS
FOURTH RESEARCH SYMPOSIUM PROCEEDINGS**

JANUARY 9-11, 1998

BRADFORD WOODS, INDIANA

The *Coalition for Education in the Outdoors* is a network of institutions, organizations, agencies, centers, businesses, and associations linked and communicating in support of the broad purposes of educating in, for, and about the outdoors. The Coalition assists in identifying the needs of its affiliates and the fields of outdoor education and seeks to find ways to assist in meeting those needs. The Coalition attempts to empower its affiliates in meeting their various constituent needs, as well as advancing the mission of outdoor education globally.

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**COALITION FOR EDUCATION IN THE OUTDOORS
FOURTH RESEARCH SYMPOSIUM PROCEEDINGS**

1998

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The Coalition wishes to express its apologies for the omission of
M. Deborah Bialeschki from our list of editors on the front cover.

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BUILDING THE RESEARCH FOUNDATIONS OF OUTDOOR EDUCATION

Karen M. Fox, Leo H. McAvoy, Anderson B. Young

Fourth Biennial CEO Research Symposium

With the publication of the proceedings of the Fourth Biennial Coalition for Education in the Outdoors Research Symposium, and with plans underway for the fifth symposium in 2000, it is appropriate to record the background and purposes of this initiative, to highlight the contributions in this volume, and to say a few words about the future for research in education in the outdoors. In essence, these research symposia are an extension of the Coalition's commitment to communication for the enhancement of education in the outdoors. We seek to strengthen the field of outdoor education and to empower those associated with it.

The Coalition for Education in the Outdoors was established in 1987 as a means of improving communication among those involved in outdoor and environmental education. Ironically, one of the strengths of outdoor education, its interdisciplinary nature and its pursuit of multiple aims, is also one of its weaknesses. This multi-faceted nature of outdoor education has segmented the field into interest areas. For example, there are a host of national associations that meet the needs of educators in the outdoors. Among them are the Association for Experiential Education, the American Camping Association, the National Recreation and Park Association, the National Association for Interpretation, and the North American Association for Environmental Education, to name a few. All do good work. Many have parallel programs in other countries and at the state or provincial level. Each of these organizations has done much to

serve the needs and interests of its members, and each tends to give primary emphasis to particular dimensions of education in the outdoors. Unfortunately, the proliferation of organizations makes it almost impossible to keep track of the full range of developments in outdoor and environmental education.

The Coalition for Education in the Outdoors (CEO) was created as an information clearinghouse to enable individuals and associations to keep in touch with one another. CEO is not an individual membership organization, but a collection of nearly a hundred associations, businesses, agencies, and educational institutions involved with outdoor education. The Coalition seeks not to duplicate services of existing organizations, but to extend the reach of those organizations. It has done so principally through its quarterly magazine, *Taproot*, which reaches hundreds of subscribers, and secondarily through conferences.

CEO's research symposia are an extension of its networking mission. Most national and state outdoor education organizations are practitioner-oriented. While each tends to understand the importance of research and includes programs and services related to research, few have been able to sustain and nurture an ongoing researching community. For this reason, the founders of CEO established a research committee that would help the Coalition to advance the philosophical, empirical, and theoretical bases of outdoor education. That committee, first chaired

by Camille Bunting of Texas A & M, organized the inaugural symposium in 1992 and laid the foundation for the three that have followed, as well as for the ongoing work of CEO in the area of research and scholarship (See Henderson, 1992).

It is difficult to establish a niche in the world of research especially in a hierarchical, scholarly, discipline-bound arena. Two things must occur: development of a body of knowledge and recognition of the field. Given the "youth" of research in education about the outdoors, it is not surprising that we are still struggling with our own research. Furthermore, the research about education in the outdoors is focussed on understanding a complex and interrelated phenomenon of theory, practice, physicality, subjectivity, and spirituality. A small group of fourteen passionate and committed researchers have been the core participants during the first four symposia. The total number of presenters has ranged from sixteen to thirty. Although difficult to categorize the variety of research, topics such as adventure therapy, outdoor leadership, outdoor education programs, and the subjective experience have captured the primary interest of the researchers. Related areas such as group dynamics, camping programs, gender issues, experience-based training and development, and research directions have woven themselves around the main themes.

To advance the philosophical, theoretical, and empirical bases of outdoor education, these symposia have three subordinate aims: building a scholarly community, presenting scholarship for education in the outdoors, and addressing challenges and trends relevant to the field. Responding to the first aim, the symposium is designed to build a sense of community among those interested in outdoor education and research scholarship. Although these proceedings are an important

product of the symposium, the less formal communication at the symposium is an equally important, though less tangible, outcome. The participants at the symposium reflect the diversity of outdoor education. As mentioned above, this symposium attracted a group of people that would not have had the opportunity to gather at the meetings of any of the many fine professional conferences throughout the year. The symposium was structured to be highly interactive and supportive. Participants turned to each other for help in design of future studies. Research partnerships were formed. In essence, the symposium cultivated a sense of community and cooperation among its participants.

As the attendance to the symposia has remained fairly stable, it is still a small group with limited resources. We might want to consider how we can engage other scholars and mentor new scholars to enhance and extend the research in education about the outdoors. Although there is a need to be seen and heard in other arenas, the format of the symposia has been one of community building, collaborative learning, and energy creation for all who have participated.

Responding to the second aim, as reflected by these proceedings, the symposium marks an opportunity for scholars to present their work to one another and, through the proceedings, to the larger community of outdoor educators. These proceedings include a group of research reports and essays on a wide variety of outdoor education-related topics. Major themes such as evaluating outdoor educational programs and the subjective experience of the outdoors have continued to receive primary attention of outdoor education scholars. Other scholars are focusing in areas such as gender issues, organized camping, adventure therapy, and leadership. The proceedings, like the

symposium itself, reflects the diversity of outdoor education. They are a group of papers that would not have been gathered or published by any single outdoor or environmental education organization. The authors are devoted to establishing and supporting the field.

Third, the symposium also provided a forum to address areas of ongoing concern to researchers and scholars in the field. Three such sessions were included in the program on an invited basis. Continuing a symposium tradition of including major reviews of literature, Karla Henderson and Nina Roberts presented and wrote a review on women in the outdoors. Tom Potter and Scott Wurdinger engaged participants in an examination of controversial issues in adventure education. In a third special session, Simon Priest led an engaging and productive working session on the future of research in outdoor education (which is summarized herein). These sessions were supplemented by several of the individual papers. For example, Sibthorp's review of some research on adventure education continues the theme, initiated by Ewert and McAvoy (1994), of the need to connect research for education in the outdoors to larger arenas. Discussions about the connection of our research to other disciplines, to the world-at-large, and to current trends in the field seem fitting with the year 2000 looming before us.

Yet the task is daunting. During the 1996 Symposium, one of the presenters touched many of us, while describing certain struggles with research. This colleague's research creates a basic evaluative foundation for outdoor education programs, even though the results are tenuous. Yet, our colleague struggles to adapt and strengthen evaluative tools, because somewhere, deep inside, there is the feeling that it might be more effective just to sit on the hill with participants, sing songs,

and share their connections with the natural world. Strangely enough, Karen Fox was reminded of this struggle as she read an analysis of embodied philosophy in slave narratives by Fishburn (1997). Fishburn argues that slave narratives can be read as a challenge to the Western metaphysical position that splits mind and body and ignores the world and knowledge of the body. Maybe we are looking for our answers in the wrong places. Disciplines, evaluative tools, and research frameworks built upon the split between mind and body or assessing only the rational may undermine the very values and phenomena of our field. Education about the outdoors may, at some level, be a "site of resistance" and challenge to the basic assumptions of the fields from which we borrow models and research instruments. Ewert and McAvoy's (1994) words are relevant in this regard.

Outdoor education will probably never achieve the high national visibility enjoyed by other disciplines such as psychology, forestry, education, or the physical sciences. Nevertheless, this field can play an important role in a number of areas, because it provides a bridge between society, technology, and natural resources. In addition, outdoor education allows the participant to come into direct contact with other people, other communities, and the natural environment to form all-important personally meaningful links with the outdoor setting. Outdoor education programs should be including dialogue and learning opportunities on topics such as ethics, environmental policy issues, social equity and justice, and public participation in decision making, and human and natural resource utilization (p. 7).

With this in mind, some of the analysis, critical positions and new theorizing from the fields of feminist theory, critical theory, deconstructionism, and chaos theory may be worth a closer look. Such scholarly explorations are exciting because they open up new avenues of thought, re-visit and re-frame given concepts in a field, and provide a means to build new strategies.

We agree on the need to continue building our research base and supporting individual scholar's research programs. Yet, we also agree with Ewert (1996) that our field needs to interact with and comment on current controversies and debates surrounding the foundation of knowledge, the application of knowledge to current needs, and the powers involved in knowledge creation and distribution. Scholars in outdoor education have a unique role to play because of our commitment to the natural world, experiential learning, connection between theory and practice, and ethical strategies. In addition, we need to address perspectives grounded solely in the world of technology, if we are to provide creative alternatives that re-connect humans with the natural world (such as the discussion on restorative environments during the 1992 Symposium). In a world where nature is not self-evident, nor applicable across all cultural differences, we will need to develop new discourses related to outdoor education. Perhaps we are struggling with our research because at the foundation of our words is a challenge to conventional thought as we embody the self and connect it with the natural matrix. If so, we will have to re-examine what we mean by body and nature. It can be exciting, heady, and frightening.

Researchers, like their other colleagues in outdoor education, represent a diversity of backgrounds and interests. They attend different conferences and

write for different literature sources. Through these biennial CEO research symposia, we are able to present some products of their work in a single proceedings, and equally important, we are building a research community that can only help to strengthen the field of outdoor education and the people and the environment it serves.

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AN INTEGRATIVE REVIEW OF THE LITERATURE ON WOMEN IN THE OUTDOORS

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INTRODUCTION

A 35-year old guidance counselor who had spent little time in the outdoors as a child made this statement after a two-week Woodswomen-sponsored canoe trip in Canada, "I miss being outside all day long, watching the sun rise and set everyday. I miss watching the clouds change shape from morning 'til night....I miss the fabulous Portage Queens (the name the group had given themselves)." Growing numbers of women are participating in outdoor activities. Historically the outdoors has been considered a male domain, but many women have participated regardless of the lack of support and social affirmation (Miranda, 1987). Bialeschki (1992) suggested that women have always been involved in outdoor activities but only recently have their numbers and experiences been documented.

Despite the evidence that women and girls are more visible in the outdoors, we still know little about their outdoor experience as evidenced by the relative dearth of empirical studies conducted. The literature on girls and women in sports, for example, increased in the past 15 years, but the subset of research on women and the outdoors grew more slowly. Considering the existing literature, however, it is useful to analyze where current research has taken us and the areas that require further focus. The purpose of this integrative review is to examine what the literature says about

girls and women in the outdoors, review where gaps exist, and suggest some possible directions for the future.

Methods

Approaches including research on girls and women, feminist research, and gender-based research have contributed to the breadth and depth of understanding about women and the outdoors. In each approach, girls and women are placed in the center of analysis, but each has a slightly different focus. Research about women, for example, has made the involvement or lack of involvement of girls and women in the outdoors visible. Feminist research has had agendas leading to uncovering oppression and empowering women through outdoor involvement leading to individual and social change. Gender-based research, whether related to differences or the cultural connotations associated with one's biological sex, has resulted in broader analyses of the gendered meanings of this involvement (Henderson, 1994a; 1994b).

The intent of this integrative review was to examine approaches used in the existing literature about women and the outdoors, to determine the status of current research, and to suggest implications for the future. The following tasks constituted this integrative review: delimiting the research review questions, identifying the studies to be analyzed, presenting the findings from the studies,

analyzing the findings, interpreting the results, and writing the review (Jackson, 1980).

Specifically, the purpose of this study was to conduct an integrative review of empirical research on girls and women in the outdoors over the past twenty years (1976-1996). Through initial ongoing work by Roberts (1997), we identified studies that met the following criteria: the topic addressed women or gender and the outdoors with a focus on adventure-based programs and recreation/education activities; addressed all ages of women; included North American and international studies written in English language; and appeared as refereed articles, empirical studies, dissertations and theses, or juried proceedings. Books and chapters in books were included if they were empirically based. The review questions were delimited to examine the topic of the research, the methodology used, data findings, and the additional questions raised by this research.

Results

We will discuss the results of the integrative review based on what we learned in the systematic analysis. These results are summarized in the conclusions section along with an identification of the issues associated with studying women and the outdoors that appear salient. These results are discussed related to evolutionary stages, leadership, and participation as the organizing themes for the analyses.

Evolutionary Stages

This integrative review was analyzed from several perspectives. First, we examined the literature based on evolutionary phases (Henderson, 1994a). Because the study of women, gender, and the outdoors has unfolded through different approaches, our analyses were based on a

feminist phase theory that has assisted scholars in describing research on women (Tetreault, 1985). These phases were applied to existing research on girls and women in the outdoors. The major analyses encompassed the past twenty years because little research literature existed about women's outdoor experiences in the first phase where information and knowledge about women in the outdoors was invisible.

This acknowledgment of invisibility resulted in a second phase discussion of "women worthies" where scholars attempted to identify women who contributed historically to the outdoor movement. In this second phase, we have seen literature about famous women's climbing teams (both rock and mountaineering) and stories of women explorers, although most of these have not been documented like traditional research studies. These stories have been important and significant, but they have not defined the relationship of women to the outdoors that most everyday women address nor have they been useful in a broader social analyses.

A third phase of the literature focuses on gender differences in the outdoors with the male model of outdoor experience generally compared to female ways of being. Although these studies have made girls and women visible in the literature, they have not always helped understand the experience of women in new ways. In this stage, women tend to be compared to men rather than examining the experiences of female participants. The problem with this research is that the differences have become the conclusions, rather the starting point for understanding the experiences of either males or females in the outdoors. We describe several examples of the meaning of this research later in this paper (e.g., Ewert & Young, 1992; Johnston & Blahna, 1993; Klarich, 1995; Marsh, 1989). This stage of re-

search is useful but insufficient without considering further phases.

A fourth phase of evolution in this field, often occurring concomitantly and as a reaction to the gender differences phase, is research about the experiences of women. This aspect is called the feminist scholarship phase (e.g., Hardin, 1979; Henderson, Winn, & Roberts, 1996; Humberstone & Lynch, 1991; Mitten, 1994; Pirfman, 1988). These studies are useful particularly related to understanding the value of women as leaders and of all female groups.

The newest emerging phase related to understanding the interface of gender and inclusion and how they affect women's and men's involvement and behavior in the outdoors, (e.g., Fox, 1992; Loeffler, 1996; Roberts & Drogin, 1993). This phase examines not only gender but the intersection of issues such as race, class, ability, and sexual orientation. Researchers are moving into a greater understanding of gender and its meanings in the outdoors by acknowledging the great diversity that exists among women.

Among these phases, the two primary areas of content were leadership and participation in the outdoors. Both of these areas included aspects related to gender differences, feminist research (although not always stated as such), and gender and diversity. The context of women's participation in the outdoors was further analyzed related to personal, sociocultural, and therapeutic outcomes.

Leadership

Leadership in the outdoors, and the need for more visible leadership by women for a variety of reasons, has been evident in the outdoor literature of the past twenty years. Much of the literature about women's leadership in the outdoors has

centered on gender differences. Jordan (1988), for example, found many individuals in Outward Bound courses were more likely to want a male leader. Most men responded to stereotyped needs while most women were interested in actual levels of competence rather than the sex of the leader. Loeffler (1996) documented that women generally were underrepresented in executive and management positions related to outdoor programs. They also had lower wages and more discrimination as they tried to work in powerful male networks. Other constraints to their leadership included low self-esteem, gender role socialization, and the absence of early outdoor experiences. Koesler (1994) examined leadership in the National Outdoor Leadership School (NOLS) and concluded that mentoring had the most influence on female leaders. Women may develop leadership skills and styles differently particularly related to their need for mentoring. Others (e.g., Bell, 1996; Holzworth, 1992; Loeffler, 1991; McClintock, 1996; Warren, 1993) described the responsibility of instructors as role models and the benefit of all-women groups.

Other researchers have examined what makes women effective as outdoor leaders. Lehmann (1991) found that effective leadership is possible when grounded in a coherent ethical framework. Mitten (1994) discussed the need for ethical considerations based on a different model for women and girls than for men and boys. This model for females included a focus on shared leadership and cooperation. One of the earliest studies in this area by Hardin (1979) explored how all members of a group might be empowered to be leaders. Similarly, Warren (1993) described the value of a feminist pedagogy that enabled all group members to assume their own level of leadership. Bell (1996) used a feminist consciousness to show how practice is affected in the outdoor

setting. The focus was on how leaders, preferred to be called facilitators or guides in this study, help participants get in touch with their own strength, determine what it means to be a woman, and locate a sense of self.

The predominant conclusion that emerged regarding leadership was that women tended to lead outdoor groups differently than men. A feminist philosophy that seeks to empower women and enhance integrity for all participants emerged as a useful framework for examining leadership in the outdoors. Unfortunately, many of the models of leadership were male experience based so the work on new models is only beginning. Particularly missing in the literature was the impact of leadership styles and explanations of why gender differences may exist. This research has also failed to take into account the models of leadership addressed in education and related fields that may be available for women (e.g., Henderson, 1996).

Participation

The second major area emerging as a category in the integrative review was the focus on girls and women's participation in outdoor activities. We divided this research area into four themes: gender differences, diversity issues, organizational structure, and the context of meanings of the outdoors for women.

Gender Differences

Differences were evident in some outdoor activities, although the problem with identifying differences was that often they were complicated by more than just one's biological sex. For example, Klarich (1995) concluded that differences in outdoor recreation patterns existed between women and men, but no difference was

found in the amount of time spent outdoors. Bunnell and Vesely's (1985) study about caving found that women were less involved than men, and were more likely to go for aesthetics whereas males went for the glory of exploring the unknown. They also found that women were more social than men in their caving endeavors. On the other hand, Burrus-Bammel and Bammel (1990) examined camping behaviors and personality type and found that individuals identifying as stereotypically "feminine" were less likely to camp. Over 90% of the activities done while camping that Burrus-Bammel and Bammel included in their survey were the same for males and females. Females, however, were almost totally responsible for meals.

Diversity

Diversity was an emerging issue in the outdoors. Its meaning encompassed many aspects of difference. Mitten (1989) described issues of diversity and showed case examples of how people talking about these issues specifically related to sexual orientation and all-women groups. Roberts and Drogin (1993) described the lack of participation of African-American women in the outdoors and identified such potential factors as: historical oppression and racism, stereotyping by race and gender, lack of role models, insufficient exposure to activity options, limited accessibility to outdoor recreation areas, and oppressive economic conditions. In another study, Roberts and Drogin (1996) also found that the majority of women of color believed that they had not been socialized to participate in outdoor activities, often due to race. At this point, little other literature has addressed additional issues of diversity and women in the outdoors, although this area has been identified as important by a number of individuals (e.g., Fox, 1992; Henderson, 1994b; Henderson et al., 1996; Washington, 1988).

Group Organization

Literature about women's participation in the outdoors during the past twenty years has addressed aspects of the organization of groups related specifically to all women programs. Bean (1988) concluded that women in all-female groups react differently because when men are present, women allow men to take leadership roles and tend to defer decisions to them. Henderson and Bialeschki (1986) identified how individuals in the all-women groups they studied were happy to be free of traditional gender expectations. Holzwarth (1992) summarized literature about women only groups and found participants thought this type of setting was important because of gender-free expression, individual goal setting, flexible itinerary, supportive atmosphere, appropriate risk taking, shared decision making, cooperation not competition, women as role models, and fun as a priority. Similarly, Mitten (1992) described the values of women-only groups and feelings of empowerment. The justifications for all-women groups prevailed in the literature. Clearly research showed these gendered groups were valuable, although more remains to be explored regarding the dynamics within such groups.

Meanings of the Outdoors

The meanings of the outdoors for female participants have also been a topic undertaken by several researchers. We analyzed these "meanings" under the subthemes of personal, sociocultural, and therapeutic. These three areas were not without overlap but they give a sense of what we analyzed about women and involvement in the outdoors.

Personal. The personal meanings of the outdoors for women have been examined in a number of ways. Risk was

one area. Bean (1988) studied risk recreation and found that those women who scored high on risk tended to participate in a variety of activities and portrayed a variety of traits. Blessing (1988) found that high risk women were curious, contemplative, individualistic, innovative, indifferent, disciplined, venturesome, self-assured, directed, and liberal. Campbell, Tyrrell, and Zingaro (1993) studied female paddlers and discovered they had higher thrill and adventure seeking (TAS) scores than other women, but not as high as male paddlers. Washington (1988) found that black women had lower scores on thrill and adventure scores, and disinhibition scores. The data seemed to suggest that most white women who participate in the outdoors were more open to the challenge of risk.

Related to risk, as it has personal meaning for women in the outdoors, was the aspect of fear. Ewert and Young (1992) studied college students before, during, and after an outdoor program. Social based fears (e.g., letting people down, not meeting others' expectations) were higher for all participants than physical fears. Females reported higher levels of anxiety, but for both males and females these anxieties changed as they participated. Ewert (1992) also found that gender differences existed before and immediately after the course. Females were more fearful. He concluded that perhaps females were no more fearful than males but they were able to admit their fears to a greater extent. Humberstone and Lynch (1991) discovered that elements of fear and lack of confidence inhibited success more than physical limitations or ability for both men and women. Exploring other elements of fear in the outdoors (e.g., fear of violence) has yet to be studied empirically.

Researchers frequently studied how the outdoors provides great opportu-

nities for self-esteem building, but these results were sometimes hard to measure. Many of the programs studied were too short to measure significant results, yet those that were investigated identified several dimensions of self-concept. For example, Finkenberg (1994) found that women involved in an adventure program scored higher on two of nine measures of self esteem and overall self concept than a control group. A sense of control over one's life may be associated with involvement in the outdoors as Henderson & Bialeschki (1987) uncovered in their study of an all women's camp. Choice was essential for these women as was being able to be like a child again. Parkhurst (1983) found that an Outward Bound experience resulted in perceived increases in self-confidence, initiative, maturity, and ability to mix with others. Further, Marsh (1989) discovered that people who participated in Outward Bound had an increase in stereotypical masculine personality traits for both males and females; increases were also greater in single sex groups of women.

In summary, most of the research about the personal meanings suggested that the outdoors is good for women and that participation in outdoor activities can build both self-confidence and self-concept. The problem with this conclusion is that we do not know exactly how those outcomes occur for women. Further, we have not always examined what dynamics must be present for growth to occur.

Social. Another area of meaning for women in the outdoors related to sociocultural dimensions. The individuals with whom one interacted in the outdoors provided meaning. For example, Groff (1989) found that outdoor adventure program experiences as a child most affected future involvement but also created a contradiction regarding the gendered na-

ture of the outdoors. Girls had positive experiences in the outdoors but also learned that it was primarily a male domain.

Gender roles and sex typing were also dimensions of the social meanings of the outdoors. Rogers (1978) found few significant differences in perception of outdoor activities as reflecting "stereotyped traits." Climbing, however, was viewed twenty years ago as the only strictly male activity, and hunting and fishing were acknowledged as less appropriate for females. McClintock (1996) found many reasons why women want to participate in women-only groups. One issue, for instance, related specifically to the desire to escape the bounds and limits that sexism and gender roles have placed on women. Even when sexism appeared, most women would still rather be with others in the outdoors than by themselves. Further, Lenskyj (1995) was critical of the assumption that the outdoors is always a helpful metaphor. The outdoors may still invoke power issues where women are "kept in their place" through reflecting women's roles in society rather than empowering them.

The major issues of constraints to finding meaning in the outdoors for women related to social dimensions. For example, Hollenhorst (1988) found males and females thought rock climbing required a great deal of strength to be successful. Additionally, a barrier for women was lack of opportunities to try adventure activities. Skills and ability were not limitations as much as cultural stereotypes and misconceptions. Johnston and Blahna (1993) concluded that constraint factors for women in the outdoors included risk of injury, lack of skills, poor health, and lack of discipline. They also suggested that history of socialization constrained women more than current social roles.

Therapeutic. The therapeutic benefit of the outdoors for women is an area that has taken on great significance in the past 10 years. Therapeutic benefits ranged from dealing with stress on a daily basis to examining how the outdoors might be a major therapeutic milieu. Mitten (1986) suggested that women do not like to be under stress and that the outdoors might be a way to counteract the negative effects of stress. Additionally, survivors of violence have found great potential in the outdoors. Mitten and Dutton (1996) found that survivors of sexual abuse experience outdoor living by focusing on inclusivity and safety, self-assessment, and impact of natural elements. Pirfman (1988) confirmed that a three day wilderness course as an adjunctive treatment for victims of rape resulted in a decrease in overall level of fear, fear of rape, and fear of failure. She concluded that the outdoors may be an effective "complementary" treatment. Similarly, Israel (1992) did a study of Outward Bound participants who were survivors of violence. Women perceived themselves as having an increase in self concept, a more positive appraisal of their problem-solving abilities, and greater expectations that powerful others would not have an effect on them after their trip.

Roberts (1995) explained how wilderness therapy may be beneficial for women in general, but ethnic minorities who are often less comfortable with the outdoors, might need nurturing. Women of color may not seek an educational opportunity to find energy and healing in the wilderness when traditionally the outdoors has signified a foreign concept to them. Outdoor researchers are just beginning to address the issues of women of color and the benefits of wilderness therapy for all women. Clearly more empirical research is needed in this area. Nevertheless, the results gained so far are compelling regarding the value of the outdoors in some

settings for addressing therapeutic processes for women.

Conclusions

The purpose of this integrative review was to examine the current state of research on women in the outdoors and to build upon the body of knowledge so that researchers, educators, and practitioners can understand people's experiences in the outdoors better. In the infancy of research on women and the outdoors, we may be raising more questions than we are answering. We believe this position of raising questions is where we need to be if we are going to set an agenda for future research. We observed an ever emerging body of questions to keep in mind as we pursue scholarly work. In this conclusions section, we summarize some of the results and offer further questions to consider in conducting ongoing research on women and the outdoors.

The first conclusion relates to the approaches used in doing this research. Much of the research done on girls and women is not framed as feminist or gender-based. Perhaps the assumption exists that all research on women is feminist, but this assumption may not always be true. Those individuals (e.g., Bell, 1996; Warren & Reingold, 1996) who have specifically used a feminist framework have been explicit in its value. For example, Bell (1996) contended that leadership and feminism could productively be explored as sets of varied practices. Future research that uses an explicit feminist framework may provide a stronger foundation for understanding not only research on women in the outdoors but also the broader cultural aspects that can lead to an understanding of gender and diversity.

A second conclusion is gender differences as conclusions for research tell us little about the outdoor experience for

girls and women. We struggle with the question of what difference "difference" makes and how much difference must exist before meaningfulness can occur. We found evidence that female leadership styles are often different from male leadership. Although researching gender differences gives some clues regarding how outdoor experiences may be different based on biological sex, we must be careful not to essentialize those differences and suggest that all women or all men experience the outdoors in the same way. We also must examine the underlying socio-historical dimensions to explain differences such as the likelihood that many women encounter dissimilar acculturation than most men. Women often bring different values and expectations into outdoor activities. Researchers in other fields of study have also concluded that women are not one homogeneous, socially undifferentiated class (e.g. hooks, 1994; Scraton, 1994; Tetreault, 1985). If we analyze gender differences as the starting point and not the conclusion of our research, we understand more about the meanings of the results. The key is in determining if and how these dissimilarities are problematic whether related to leadership or to participation. Further, differences between men and women may not be as dramatic as the diversity that exists among women. Regardless of how differences are manifested, they are complicated and can become easily misunderstood whether leadership or participation is being discussed.

Research on girls and women in the outdoors has contributed to a broader understanding of the epistemology and methodology used by researchers. Dustin (1992), for example, questioned the wisdom of the patriarchal view underlying social science. He provided a foundation for using feminist research as a way to challenge the world view, the separation of humankind from nature, and the objec-

tivity of science. Feminist perspectives on women's outdoor experiences offer a way to expand the methodological paradigm in which the research occurs. Most researchers studying women and gender recognize that no singular research method exists (Henderson & Bialeschki, 1992). Varied methods help understand the meanings of the outdoors in the lives of women and men. Fox (1992) indicated that properly designed quantitative research need not distort women's experiences and Henderson and Bialeschki (1992) suggested that quantitative approaches are useful when the interpretations are grounded in theory and efforts are made to uncover the meanings of the results. Although interpretive research is not the domain of only feminists, it has offered a useful way to understand the social construction of women's lives (Henderson & Bialeschki, 1992; Reinharz, 1992). The acknowledgment that many methods are useful, regardless of whether we collect qualitative or quantitative data, has provided new techniques for research in the outdoors regarding both women and men.

Studying girls and women may pave the way for addressing gendered meanings and other issues of diversity in the outdoors. For example, perhaps some of the successful emerging leadership patterns involving feminism (e.g., Henderson, 1996; Warren, 1993) may be applicable to men. Further, outdoor researchers studying women have the potential to reevaluate existing theory by pointing out the diversity and the contradictions inherent in understanding the outdoor experience. Examining the outdoor experiences of girls and women can make an empirical contribution by problematizing the outdoors, exploring how women experience the outdoors, and articulating how women resist and struggle to define their own outdoor spaces and experiences (Scraton, 1994). Although different femi-

nists have varying agendas, the purpose of most research about women in the outdoors has not been to negate contemporary research, but to enhance our interpretations of outdoor meanings. Where appropriate, the discovery of new ideas and analyses may make old interpretations obsolete. Those new interpretations, however, should have implications for broader, not narrower, theory. Any analysis is incomplete without progressing to the next step of discovering new approaches to correct past misconceptions. If research about the outdoors is to be useful today and in the future, we cannot lose sight of the economic, social, political, and physical reality of the individuals we are studying. Simply to critique does little good in extending knowledge unless we are ready to incorporate additional suggestions for social change. In using research about women as a corrective device, researchers can challenge the universalizing tendencies in the writing of both white, middle-class feminists (hooks, 1989) as well as white men. Race is an obvious omission as are class differences regarding women's involvement in the outdoors. Lesbians point out heterosexual assumptions in research and practice, and women with disabilities suggest that normative models do not always work (Fine & Asch, 1988). Acknowledging the need for understanding diversity, however, does not compensate for exclusion in writing or research. Research studies must be designed to provide data to explain the experiences of underrepresented populations in the outdoors.

A strength and yet a weakness of the literature about girls and women in the outdoors is that some individuals have written from a purely personal perspective. Although this approach is helpful, a need exists to find more outlets for research that emphasizes critical analyses in addition to personal experience. This reflexivity, that feminist researchers have

embraced, has allowed outdoor researchers to move beyond trying to find a single answer, to explaining a range of possibilities that may work for different people. The field of outdoor education is in need of more and better research outlets, and this dearth of empirical outlets is creating a breakdown in the development of theory. Further, some of this literature is not easy to access so we have not been able to build upon previous research in ways that would be useful for theory development and testing. Better communication links among professionals will need to be established. Research on girls and women needs to be mainstreamed along with all other topics in the area of outdoor research.

Empowerment is emerging as an important theme that all outdoor educators may benefit from using. We are not suggesting that empowerment through the outdoors has not been an outcome for people over the years. The issue of empowerment, however, has been taken for granted rather than articulated in a way that could create social change not only for women, but for all people. More specifically, issues of empowerment are leading to questions about how to address emerging issues such as body image, ethics from a feminist perspective, measuring aspects of fear, participation patterns and cultural experiences based on ethnicity, and career development. The potential of the outdoors to function as a challenge to traditional female roles is serving as a part of empowerment and transformative change. This empowerment relates to individual empowerment as well as addressing social issues. Old theories of oppression, with the differences theorized between categories of women and men, have not moved the social change agenda forward in a way that is necessary if the outdoors is to be empowering for all people.

The research on girls and women in the outdoors is emerging but it continues to be an area teeming with possibilities. It is useful from time to time to take stock of where we are and where we want to go with this literature. This integrative review and its interpretive conclusions provide an initial attempt to discern what our research means. The need to understand women's involvement in the outdoors is no longer questioned as a significant component, but has become an integral part of exploring the human dimensions of the outdoors.

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FACTORS AFFECTING THE PERSONAL AND SOCIAL OUTCOMES OF ORGANIZED CAMPING

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Introduction

Summer camp holds a special place in the minds of children. Thoughts of camp bring images of swimming, hiking, laughing and making new friends. According to Dustin (1989), the secret of organized camping is that camp is on a finite, human scale. Anyone can make a difference in their own corner of the world. Another important aspect of camp (Dustin, 1994) is creating a place for children to be children, not "miniature adults" (p.28). Chenery (1984) sees the essential contribution of camp as providing children with a space for spiritual development. Many factors could influence what sort of experiences campers take home with them. The purpose of this study was to examine tangible, physical aspects of camp that might affect the personal and social benefits of organized camping for children. If specific factors could be associated with significantly increased personal or social outcomes, then manipulation of those factors might provide campers with better experiences.

Review of Literature

Much of the previous research into the benefits of organized camping has focused on the self-concept and self-esteem of campers. Self-concept and self-esteem are very similar constructs. Self-concept refers to the things one

thinks or knows about oneself, while self-esteem refers to "the extent to which one prizes, values, approves, or likes oneself" (Blascovich & Tomaka, 1991, p. 115). In some of the psychology literature, self-concept and self-esteem are differentiated, while in other discussion they are held to be the same. The Piers-Harris Children's Self-Concept Scale, used in much of the camping research, views them as "synonymous" (Blascovich & Tomaka, 1991, p. 137).

Three of four recent studies examining the benefits of camping on the self-concept of campers utilized the Piers-Harris Scale. Myers (1978) studied the association between leadership components and camper development in self-concept, interpersonal affect and environmental attitude, using 100 staff and 122 campers from seven different camps. Significant positive changes in self-concept and environmental attitude were noted. Chenery (1981) investigated the effect of summer camp on child development and contributions of counselors to those effects. A significant increase in self-concept scores was found, although none of the demographic variables of age, grade, payment status or previous camp experience were correlated to this. Cowin (1989) studied factors affecting self-concept and psychological well-being in a camp setting. A significant increase in self-concept was found, with campers crediting the "car-

ing, sharing environment" (p. 178) and the program, itself, for the greatest number of positive feelings. Krieger (1970) used the Lipsitt Self-Concept Scale for Children and the Bowers' Behavior Rating Scale to examine the effects of organized camping on self-concept change in relation of three variables: age, sex and observable behavior change. He found significant increases in self-esteem and a strong decrease in poorly adjusted behavior in 110 campers at a four week camp, compared to a control group of 70 non-campers. There was no differential effect on self-concept as a result of age or sex.

Fewer studies have been conducted on self-esteem. Dorian (1994) found significant increases in self-esteem in 256 campers at a two week camp. Rubinstein (1977), in a study involving 146 campers, found a significant increase in the self-esteem of campers at a camp that did not offer competitive activities, but not at a camp that did have competitive activities.

Research on factors affecting the outcomes of camp has been somewhat haphazard. Most of the research has been done on camp counselors (Chenery,

1981; Cowin, 1989; and Myers, 1978) with inconclusive results. Factors shown to be significantly associated with increases in self-concept of campers include the caring environment (Cowin, 1989), non-competitive camps (Rubinstein, 1977), and having a choice of activities (Rubinstein, 1977). Factors shown to have no significance in the affective outcomes of camping in previous research include new/returning campers (Chenery, 1981; Cowin, 1989), school grade or age (Chenery, 1981; Cowin, 1989; Krieger, 1970), payment status (Chenery, 1981), and sex of the camper (Krieger, 1970).

In addition to self-concept and self-esteem as outcomes of organized camping, an interesting study by Chenery (1991) compiled a list of statements made by campers, counselors, directors, alumni, and parents concerning the outcomes of camping for children, specifically pertaining to learning about oneself (personal outcomes) and learning about group living and interpersonal skills (social outcomes). Twenty-seven of these statements were utilized in the present study in a questionnaire for campers (see Table 1). Demographic information was also obtained from the campers.

Table 1

Outcome Statements

At camp this summer, I learned:

Personal outcomes	Social outcomes
1. To be independent	1. To make friends
2. To be myself	2. To get along with others
3. To like myself	3. How to act nicer
4. To have confidence in myself	4. To be less shy
5. To challenge myself	5. More about right from wrong
6. To be happier	6. To help others
7. To do without my parents	7. To accept others
8. To appreciate my family	8. To share
9. To be more mature	9. To trust others
10. To have more energy	10. To cooperate with others
11. That I can do most things if I try	11. To control my temper
12. Not to be lazy	12. To be responsible
	13. That its ok to be different
	14. Not to be selfish
	15. To be part of a team

A separate questionnaire for the camp directors provided information in four areas about the camp: general camp descriptors, programming aspects, staff characteristics, and director characteristics (see Table 2).

Methods and Procedures

Using the five different regions of the United States identified by the American Camping Association, a stratified, random sample of camps in the United States operating during the summer of 1996 was selected from two different guides to summer camps. Equal numbers of camps identified as accred-

ited by the American Camping Association, and those that were not accredited, were invited to participate. As well, equal numbers of camps identified as specialty camps (those that spent 60% or more of their time on one particular activity) and general camps (those offering a wide variety of activities, but none of which took 60% or more of the program time) were invited to participate. Camps were delimited to those offering residential programs serving children not specifically designated as disabled. This study limited was by the fact that all the information provided about the camps was self-reported by the camp directors, not observed by a neutral party.

Table 2

Independent Variables

<u>General camp descriptors</u>	<u>Programming aspects</u>
number of campers	division of campers into age groups
camper/counselor ratio	% of time with different ages
cost to attend	service opportunities
length of the session	number of service opportunities
camp setting (urban, rural, wilderness)	choice of activities
Accreditation status	% of time in chosen activities
type of camp (general/specialty)	coed activities
camp goals	% of time in coed activities
unusual incidents	coed sports and games
	coed religious activities
	coed dances
	coed cookouts
<u>Staff characteristics</u>	<u>Director characteristics</u>
counselor qualifications	Highest degree obtained
average age of counselors	Undergraduate major
average salary of counselors	Graduate major
length of counselor training	Years experience in the camping field
special instructors employed	Number of certifications held
number of special instructors	
<u>Demographics of campers</u>	
Age	
camping experience	
Race	
Sex	
When surveyed	

From an original sample of 180 camps that was contacted by mail to determine interest, 36 camps indicated they would participate. Ten camper questionnaires and one questionnaire for the director were mailed to those camps, along with a random number table and instructions for randomly choosing 10 campers. Campers completed the questionnaires on the last day of camp. Data were collected from 19 of 36 camps (53%). A second sample of camps was

contacted by phone after the summer was over. Fourteen additional camp directors agreed to complete questionnaires and mail surveys to campers who had already returned home. Data were obtained from 10 of the 14 new camps (71%). Twenty-nine camp directors and 270 campers, ages 8-14, completed questionnaires in the post-test study.

Campers completed a questionnaire with 27 personal and social state-

ments taken from Chenery's (1991) findings (see Table 1). A five-point Likert scale was employed, with responses ranging from 'Very True' to 'Not at All True.' The reliability of this questionnaire was tested using a variation of the Cronbach's Alpha Test of Reliability. The Alpha score for the 27 items on the campers questionnaire was .93.

Camp directors completed a questionnaire about four different aspects of camp, each aspect containing several variables (see Table 2), which became the independent variables for the study. Using mean personal and social outcome scores as dependent variables, the different aspects of the camps were examined for significant relationships using multiple regression, one way analysis of variance and *t*-test for independent samples. The SPSS statistical software package for personal computer was utilized for analysis of data.

Results

General Camp Descriptors

Four variables were found to be associated with significant differences in outcomes. The cost of attending camp was found to have a negative relationship with both personal and social outcomes (see Table 3). Higher personal and social outcomes were associated with lower priced camps. This

does not mean that high priced camps are of lesser quality. The cost of a camp could be an indicator of many things. A low priced camp does not exclude many people, which a high priced camp might do. Children who attend a high priced camp may have many types of opportunities and experiences, camp being only one of many. For children of lower income families, camp may be the most exciting, wonderful experience they have ever had. Another possibility is that children who attended higher priced camps were better adjusted, personally and socially, before they came to camp. Campers may have looked on those outcomes as elements they already knew, not things they learned at camp.

Significantly increased social scores were associated with accredited camps (see Table 4). The American Camping Association has long been concerned with children and the camping experience. Their accreditation process goes beyond basic health codes and food service laws, and scrutinizes management, personnel, and programming issues as they relate specifically to the camping milieu (American Camping Association, 1996). These results may indicate that attention to the concerns specific to the camping profession may be

Table 3

Summary of Regression on Cost to Attend

Factor	Description	Outcomes	B	SE B	Beta
Cost to attend	\$0-91.50/day	Personal outcomes	-.0037	.0019	-.1227
		Social outcomes	-.0047	.0020	-.1451*

*Significant at $p < .05$

Table 4

t-Test Results of Significant Camp Factors

Category	Factor	n=	Personal outcomes		Social outcomes	
			Mean score	<i>t</i> value	Mean score	<i>t</i> value
General camp Descriptors	Accredited camp	236	4.13	1.79	4.16	2.62*
	Non-accredited	34	3.90		3.81	
	General camp	187	4.13	1.01	4.19	2.32*
	Specialty camp	83	4.04		3.96	
	Unusual incidents	63	4.26	2.28*	4.26	1.78
Program aspects	Normal camp	197	4.03		4.07	
	Coed sports/games	131	3.95	-3.60	4.00	-2.54*
	No coed sports	139	4.25		4.23	
Director's characteristics	Bachelors degree	143	4.16	1.38	4.22	2.41*
	Graduate degree	124	4.04		4.00	
Demographics	Boys	97	3.95	2.68*	3.92	3.45*
	Girls	163	4.19		4.24	
	Surveyed at camp	112	4.20	1.92	4.26	2.65*
	Surveyed at home	158	4.03		4.02	

*Significant at $p < .05$

paying off in terms of increased social outcomes of camps. However, since only four of the sampled camps were non-accredited, the camper group sizes were skewed. Small group size is a potential source of error.

Significant differences in social outcomes were found between general camps and specialty camps (see Table 4), with the children attending general camps scoring higher. Children may feel more at leisure to explore the social aspects of the environment if they are not having to concentrate on acquiring skills and knowledge emphasized in specialty camps. Previous authors (Chenery, 1994; Dustin, 1994; Edwards, 1987) have reflected on the importance of a camp environment as a place to nurture

the inner person, a place to make friends and laugh.

Surprisingly, the occurrence of unusual incidents at camp were associated with increased personal outcomes (see Table 4). It might be expected that good news like a newborn baby (camp director's wife) or a handicapped camper who suddenly walks, as happened in two camps, would be associated with high outcomes. However, even the bad occurrences contributed to higher outcomes - lack of water, lice, and a counselor who got hurt but came back to work. The increased personal outcomes may reflect the inner growth of the campers as they learned to deal with difficult situations. Being able to share difficult circumstances with others helps

build camaraderie that can have long lasting benefits.

Several variables in this group were not significantly associated with increased outcomes: number of campers, camper/counselor ratio, setting, goals, and length of the camp. Although not all camps were accredited by the American Camping Association (ACA), nearly all met ACA guidelines for camper/counselor ratio. Even in the largest camps, the campers were still in groups small enough to receive individual attention. The camp setting question had to be deleted due to misinterpretation by respondents.

Programming Aspect of Camp

One programming variable, coed activities, significantly influenced both personal and social outcomes. When four different types of coed activities were examined, all showed lower personal and social outcomes. However, coed sports and games were the only activities that showed significant differences for personal and social outcomes. For this sample of campers, it would appear that coed sports and games did not improve their personal or social outcomes. It may be that for this age group (8-14 year olds), the growing up process is difficult enough without the added effects of having to deal with the opposite sex and the social pressures that come with that interaction. Since sports and games proved the only significant factor

from among the activities tested, perhaps it is the pressure of competition that makes the difference. Rubinstein (1977) found significant increases in self-esteem in campers from non-competitive camps, but no significant increases from campers in competitive camps.

Staff Characteristics

None of the staff characteristics examined by this study significantly affected personal or social outcomes for campers. For the camps and campers in this study, the aspects of counselors that were examined did not affect outcomes: counselors' age differences, salary differences, length of training, number of special instructors hired. Many camp directors swear that counselors are the heart and soul of a camp. If the counselors are important (Cowin, 1989) and the tangible aspects of counselors are not significant, then the difference must lie elsewhere in the intangible aspects of these people, such as personality or compatibility.

Characteristics of the Director

Three variables associated with the director's education were associated with significantly increased outcomes (see Tables 4 and 5). The highest degree obtained was associated with significant differences in social outcomes. Directors with bachelors degrees showed higher social outcomes in their campers than directors with graduate degrees.

Table 5

Results of ANOVA for Significant Camp Factors

Category	Factor	Description	n =	Personal mean	F
Director's characteristics	Undergraduate major	Unrelated	40	4.05	2.74*
		Related	65	4.19	
		Education	56	3.85	
		PE	37	4.20	
		Recreation	42	4.24	
	Graduate major	Unrelated	12	3.56	2.69*
		Related	34	4.13	
		Education	33	3.94	
		PE	20	4.32	
		Recreation	33	4.09	
Camper demographics	Amount of campers' experience	Never camped	49	3.90	3.19*
		Experienced camper	152	4.18	
		New to this camp	65	4.04	

*Significant at $p < .05$

The director's undergraduate and graduate majors both significantly affected personal means of the campers. Undergraduate degrees in recreation, physical education or related fields were associated with higher personal outcomes, compared to an undergraduate education degree. Similarly, a graduate degree in physical education was associated with higher personal outcomes as compared to a graduate degree in an unrelated field, such as math or music.

The need to always be in control could be a deterrent for a "teacher" type of director from entering into the "fun" of summer camp. Graduate degrees in unrelated fields may cause those directors to focus their attention, hence the emphasis of the camp, on other areas besides personal and social development. Here again, low numbers within the

groups could lead to erroneous conclusions about the data.

Demographics of the Campers

Three demographic variables had significant influence on outcomes (see Tables 4 and 5). In this sample of campers, girls were shown to have significantly higher personal and social outcomes than boys. It might be that girls were more willing to respond to these types of questions. Experienced campers were found to have higher personal outcomes than those who had never attended camp before. It would seem that being familiar with the surroundings and the routine of a camp made a significant difference to young campers. Finally, campers who were surveyed at camp had significantly higher social outcomes than those who were surveyed up to 6 months

after they had returned home. This would seem to indicate that the social effects of camp wear off in time.

Suggestions for Continued Research

This study suggests a few avenues for continued research. The effect of coed activities on outcomes needs to be pursued. It would be interesting to determine if the negative effect of mixing sexes continues, and if it continues through a wider age span. Another topic would be a study of personal and social outcomes at camps that offer competitive activities and those that do not emphasize those activities. Our society places so much emphasis on competition, it would be valuable to determine if competition is having negative effects on children.

Conclusion

This study examined physical, tangible factors of camps that might be manipulated by camp directors to provide higher personal and social outcomes for their campers. Several factors were shown to be associated with increased outcomes for campers. Camp directors and parents should be aware of elements that could help children get more out of camp.

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SELF-EFFICACY AND ADVENTURE PROGRAMS: TRANSFERRING OUTCOMES TO EVERYDAY LIFE

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Introduction

In the field of outdoor education, the belief that outdoor adventure programs have the ability to increase the participants' self-efficacy has long been used to defend program existence and to give more credibility to the discipline (Berman & Berman, 1994; Cockrell, 1991; Ewert, 1989; Miles & Priest, 1990). Although outdoor adventure programs are based on the assumption that a positive effect on individuals' self-efficacy will carry over into the participants' lives after the course, there is little empirical research on this topic. In Hattie, Marsh, Neill, & Richards' (1997) meta-analysis of research on adventure programs, they point out the need to study the development of self-efficacy and to test specifically for efficacy (rather than self-concept in general or self-esteem). They suggest using alternative research designs to enhance the standard pre-test, post-test design so commonly used in our field. In this paper, we address the theoretical and methodological issues raised by Hattie et al. (1997), as well as the question of the transference of self-efficacy gained on an outdoor adventure course to individuals' everyday lives. The paper reports on a study of self-efficacy in adult Outward Bound participants, and the level of transference of self-efficacy gains to everyday life.

Background

Self-efficacy, as defined by social psychologists, is "the perception or experience of oneself as a causal agent in one's environment" (Gecas & Burke, 1995, p. 47). Scholars in the field of sociology, psychology, and recreation and leisure have suggested that self-efficacy is an individual's general sense of her/his ability to accomplish a given task (Gass, 1994; Shanahan & Mortimer, 1996; Rosenberg, 1986). This is not the same as self-esteem, which is how favorably one views oneself or one's actions (Gecas, 1986). Self-concept is a broader construct under which both self-efficacy and self-esteem fall (Gecas, 1986).

Self-efficacy is the person's beliefs about their ability to execute control over their own level of functioning and the events that affect their lives. Self-efficacy is a very important part of the individual coping system. We depend on our self-efficacy for task accomplishment, from the mundane to the complex. A resilient sense of efficacy is needed to sustain a continual effort, which is needed for success in any situation (Bandura 1986, 1991; Dzewaltowski 1989; Gass, 1993).

The efficacy that the individual develops can be derived from past failures and/or accomplishment(s) (Bandura 1982, 1986, 1989; Ewert, 1983; Gass, 1987, 1990). However, the past accomplishment and/or failures do not have to be specific to the particular situation in a later situa-

tion in order for an individual's efficacy to increase (Bandura 1977, 1982, 1986; Gecas 1986, 1989). Self-efficacy is learned from our prior experience and then used by the self and incorporated into the self belief system to help achieve future tasks.

A person's knowledge of their own judgment skills and perceived capability to influence their own thought patterns and emotional reactions depend greatly on their self-efficacy (Bandura 1991). People's thoughts and emotional reactions to their actual and perceived environments are influenced by their judgments. If one perceives his/herself as inefficacious, s/he perceives potential problems and difficulties as more formidable than they really are (Beck, 1976; Lazarus & Launier, 1978; Meichenbaum 1977; Sarason, 1975). People with a strong sense of self-efficacy organize their attentions and efforts toward the task and, when provoked by obstacles, muster even greater effort to overcome the stressor (Csikszentmihalyi, 1975, 1991; Bandura, 1982, 1991a; Dunning, Leuenberger, Sherman, 1995). These concepts are reflected in Bandura's Social Cognitive Theory and in the Shananhan and Mortimer theory of using stress to promote a positive change in the self.

Shananhan and Mortimer (1996) have used the construct of stress to create a model that shows how stress can lead to an increase in self-efficacy. This model shows how efficacious experience increases the person's sense of competence, escalating the probability of future competence-driven conduct (Bandura 1977, 1986a, 1986b, 1992). A sense of self-efficacy increases peoples motivation to take risks to confront and manage stressors (challenges), giving them a higher threshold of reactivity and a stronger self motivational structure. This increases the individual's motivation to engage in future challenges and to look at challenges

that are perceived to be more difficult than the past accomplishments (Bandura, 1977, 1986, 1992; Gecas, 1989). The efficacious individual is less apt to perceive minor challenges as threats to self-efficacy.

The Shananhan and Mortimer model also defines how stressors that have been viewed in the past as negative to an individual's self-efficacy can provide positive outcomes. Further, the model demonstrates how stressors generate a greater sense of self-efficacy and how this increased sense of efficacy applies to future and different challenges in a person's life.

Past research has examined the effects of wilderness adventure programs on self-concept, self-esteem, and locus of control (Clifford and Clifford, 1967; Ewert, 1982; George 1978; Marsh, 1986). Very few studies have considered whether participants are able to transfer positive feelings developed as a result of their outdoor adventure participation back to their lives at home and work. To ensure that the participants are able to use what they have acquired on the outdoor adventure program, we need to know if they incorporate the benefits of the program into their daily lives.

The purpose of this study was to determine the effect of adventure programs on the participants' self-efficacy (general, interpersonal, and socio-political) immediately following an adventure program experience; and whether there was a transfer (carry-over) of increased self-efficacy after the adventure experience to the participants' daily lives.

For this paper, self-efficacy will be defined as "a person's beliefs about his/her ability to execute control over his/her own level of functioning and the events that affect his/her life" (Ewert, 1989, p 93). We also studied specific ar-

as of participants' self-efficacy, including interpersonal efficacy and socio-political efficacy. Interpersonal efficacy is the perceived ability to interact with others in a manner that benefits the participant (Paulhus, 1983). This includes defending one's point of view during group decisions, developing working relationships, and developing personal relationships. Socio-political efficacy is the perceived ability to move feelings and beliefs into action, for example acting on a socio-political belief about such issues as environmental protection or social injustice.

Methods

A series of 21-day courses at Voyageur Outward Bound in the summer of 1996 were used as the treatment in this study. Much has been written about outdoor adventure programs (Ewert, 1989; Gass, 1994, 1990; Petzoldt, 1974; Wilson, 1981). The Outward Bound Schools are considered leaders in outdoor adventure programming; their model for adventure education has been adopted as the standard for many outdoor adventure programs (Ewert, 1989).

The study was conducted in four different geographical areas (Boundary Waters, Minnesota; Rocky Mountains of the United States; the Rio Grande River in Texas; and the Bloodvine River in Canada). The courses included one of four forms of adventure activities: flat water canoeing, mountaineering, white water rafting or kayaking.

The sample size for this study was $n=68$. The participants in this study were 18 to 29 years old and all completed a 21-day adventure course offered by Outward Bound. The participants of the study consisted of 54% male 46% female; the majority of the sample was Caucasian (96%) and between the ages of 18-19 years old (64%). The majority of the sample were

college students (81%) at the time of the study; only 20% of the sample worked full time; and 80% were unemployed or worked only part-time. There were a total of 68 participants in the study, of a possible 152 students who participated in 21-day adventure courses in the summer of 1996. Out of a total of 152 possible participants, 41 were too young (below the age of 18 at the start of the course), 38 were not given the second questionnaire as the result of an instructor's death on a course, and 5 were not given the post test 2 instrument because they were unavailable after their Outward Bound course. The usable number of subjects was 68 persons, an appropriate number of subjects considering the research design. A control group of $n=50$ was also used in this research, consisting of students in a third year university course. This group demographically matched the experimental group.

The design model used for this study was a variation of the quasi-experimental, multiple time series design using a nonequivalent (non-random) pre-test, post-test control group, as defined by Campbell and Stanley (1963). The research was conducted over a six month time period. This design consisted of a pre-test on the first day of the course, a post-test on the last day of the course, and a second post-test six months after the last day of the course (by mail). The control group was given the same test at time intervals equal to those used with the experimental group.

The instrument used in this research was developed out of three independent survey tools. The first section of the instrument was the self-efficacy scale, modeled after Bandura's format for measuring self-efficacy (1977). The scale reflected judgments that measured both magnitude and strength of self-efficacy. The self-efficacy scale included 16 items.

These assess perceived skills with regard to judgment, leadership, and self-reliance.

The second section of the instrument consisted of the Sphere-Specific Measures of Perceived Control (SOC). This survey was created to investigate the "domains" of self-efficacy: interpersonal control and socio-political control (Paulhus, 1983). These three components of a subject's life can be viewed as three concentric spheres, with the individual in the center. These are the same components of self-development that the Outward Bound program targets. The three components measured by the SOC used ten questions each; the questions were answered on a seven point Likert scale. The SOC was used in this study because one of its purposes is to indicate how a person would integrate increased self-efficacy into everyday life.

The Multidimensional-Multiattributational Causality Scale (MMA) was the fourth section of the survey, and consisted of 42 questions. This instrument evaluated achievement and affiliation based on ability, effort, luck, and context. There are various scores that can be derived from this instrument, including assessment of one's beliefs about control and ability (Lefcourt, Von Baeyer, Ware, & Cox, 1979). The initial intended population for this instrument was university students. This scale was dropped from the analysis due to the small response it received. The scale was on the last page of the instrument and was overlooked by the majority of the respondents.

There was a set of open ended questions on the last instrument (post test 2). These questions asked the participants what from their Outward Bound course they have used in their lives at home. There were three questions asked of the participants, one of which will be discussed in this article: "What aspects of

Outward Bound have you found most useful now that you are back home?"

Results

Positive changes in the subjects' efficacy were found in all three areas of the Sphere-Specific Measures of Perceived Control (SOC) and in the self-efficacy scale. Table 1 below summarizes the significance of change in efficacy. Increases in the subjects' efficacy were found in all three areas of the spheres of control measures.

As Table 1 illustrates, all scales show an increase from the pretest to the posttest 1. The self-efficacy, as well as the general efficacy measured by the SOC, show an increase significant at the .01. As speculated in other research in the field of outdoor adventure, this phenomena is expected. The results of all the scales tested demonstrated an increase in efficacy significant at the .01 level for the posttest 1 to posttest 2 interval, illustrating a continued growth in the participants self-efficacy six months after the end of their outdoor adventure course. Particular aspects of the instruments demonstrated a great increase in six months. These were the areas of work-efficacy and judgment.

The general efficacy, interpersonal efficacy, and socio-political efficacy that were tested using the S.O.C. all showed areas of increase in the subjects' lives from posttest 1 to posttest 2, six months after the course. Increases in efficacy were shown in all instruments between the pretest and the last day of the course (posttest 1). Six months after the last day of the course, again there was a significant increase in all the scales, showing a carryover to the post-course life. The control group had no significant change between the pretest and posttest 1, posttest 1 and posttest 2, or between the pretest and the posttest 2. When the experimental group was compared to the control group, the

control group scores were constant, while experimental groups scores increased at

various rates.

Table 1

Significance of the comparisons of scales to each other

Instrument	Pretest to Posttest 1	Posttest 1 to Posttest 2	Pretest to Posttest 2
S.O.C.			
General	**	**	**
Inter-personal	**	*	**
Socio-political	*	**	**
Self-Efficacy Scale	**	***	***

* = .05 level ** = .01 level *** = .001 level

The SOC showed a significant increase at the .01 level in the socio-political battery between the first and second posttests which were not exhibited between the pretest and the first posttest. One possible reason for this change is that the participants' did not have the time to act and or think about political concerns during the adventure program. The participants were in an environment that provided the opportunity to contemplate the socio-political issues referenced in the four questions during the six months following the course, which gave them the time to think and act.

There was an increase in scores in the interpersonal efficacy portion of the instrument; this increase was the greatest at posttest 1, but also increased at posttest 2. There were some questions in this section of the instrument that showed a significant change from posttest 1 to posttest 2 in a negative direction. These questions centered on romantic relationships. This is not considered unusual due to the timing of the third instrument administration and the demographics of the study population (the majority were college students, in school at the time of the third instrument). In this same section there was an increase from posttest 1 to

posttest 2 in questions that asked about group involvement and group communications.

The increase in efficacy is demonstrated with the responses to the open-ended question asked of the participants on the last instrument. These statements also give us insight into what the subjects have taken from their adventure courses and applied to their everyday lives. The question posed: "What aspects of Outward Bound have you found most useful now that you are back home?" The question was left open so the subjects could answer in any way they felt appropriate. Those qualitative responses supported the quantitative claim of transference in gained self-efficacy from the outdoor adventure to the participants' everyday lives.

One participant answered the question with the following statement: "I believe in my own abilities, I learned to listen to myself." This concept of believing in their own abilities is the very essence of efficacy. Listening to oneself is the understanding of personal control, demonstrating a strong sense of internal control. The following responses from other participants also demonstrate the transference of efficacy and an increased feeling of control:

"I take things that come before me as I would a mountain. It can be done and the rewards--strength of character and soul, satisfaction--are endless."

"I learned how to interact with others, how to be myself. I use these skills daily, and have learned more as I grow each day."

"I have learned to do things on my own without depending on someone else to do it for me."

"Climbing mountains is the same as climbing life. I know I can do it, by trying more than one path sometimes, but I know I can do it!"

"O.B. really helped in enabling me to stick with it and stick it out and give it all I can in whatever I do; the belief in myself."

All of the comments above demonstrate the transference of efficacy into the participants' everyday lives. From these statements emerge a pattern of efficacy in decision making, and the belief in succeeding at the onset. There is also a sense of internal strength demonstrated in the "I know I can do it" statements.

Conclusion

This research has shown that there is an increase in efficacy after an adventure course and then a transference of that gained efficacy into the participants' everyday lives. By using different methods of research that reached beyond the stan-

dard pretest-posttest methodology the researchers were able to gain better insight into the effects of an outdoor adventure course on the participants' self-efficacy.

Using the model discussed earlier in the paper, we can understand that feelings of efficacy will increase even more as the participant continues to encounter challenges (stressors) in life. These increases would be unlikely to occur at one time, but could be expected to come in increments and would be dependent on what further challenges are presented to the subject. To further understand the relationship between self-efficacy and adventure course experience, broadened research will be required.

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VALIDITY AND RELIABILITY OF THE OUTDOOR EDUCATION PRACTICUM QUESTIONNAIRE

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Introduction

Adventure based educational programs which take students into the natural environment for physical and psychological benefits continue to grow in popularity (Ewert 1986b). Values of these programs may include developing and maintaining a fitness base and honing psychomotor skills such as rock climbing techniques or canoeing. Benefits include the development of problem solving skills, better interpersonal relationships and a positive change in self image (Ewert, 1988). As these programs grow in popularity, program administrators and educators have an increased need to understand the intricacies of these experiences in a tangible form. Qualitative data, anecdotal experience, and narratives regarding outcomes are only part of the decision-making process concerning creation and modification of content in educational programs. Qualitative evaluation methods may provide valuable information needed to properly assess the substance and outcomes of adventure based experiences.

Examples of outcome based measures which assess effects in outdoor adventure programs include physical, sociological, and psychological variables (Ewert, 1986a). Braverman, Brenner, Frentz and Desmond (1990) suggested three components for measuring these variables: 1) A formal system of feedback from leaders and students, 2) experimental evaluations using qualitative self-report measures, and 3) naturalistic evaluation using case study techniques or personal inter-

views. Other components that can be measured include direct monitoring of physiological variables such as heart rate and blood pressure. Such techniques yield an indication of the effect of such programs, however, they do not indicate what is critical within the experience that elicits these changes. Ewert (1986b) argued that we need to take a more critical view of what we do by asking the question "how" something happens as well as "whether" something happens. He further argued that by understanding the "glue", or the nature of adventure experiences, that holds our profession together we can better understand how these experiences have an impact on individuals.

Examination of accepted definitions of adventure provide some insight into the nature of the experience and uncertainty of the outcomes appears to be fundamental to the existence of an adventure experience. Uncertainty may take the form of a perceived loss of control, personal inadequacies, program inadequacies or level of comfort. In any case, accompanying uncertainty of outcome is the possibility of loss and anxiety concerning that loss. A valid and reliable measurement of perceived anxiety would provide useful information in regard to creation and facilitation of adventure based programs for educators and administrators.

Purpose

The purpose of this study was to design a reliable and valid instrument to measure perceived levels of anxiety of students enrolled in a resident outdoor adventure education course, and to support a four-factor model of perceived levels of anxiety of students in such programs. The four proposed factors or latent variables include: 1) Level of Control, 2) Program Inadequacies, 3) Personal Inadequacies, and 4) Level of Comfort.

Significance of the Study

The development of the outdoor education practicum questionnaire represents an attempt to create a valid and reliable instrument in a relatively unexplored area. That in itself is significant. Such an instrument may be useful in helping program administrators understand how components of a program may be designed to produce appropriate levels of anxiety. An administrator that seeks to eliminate anxiety changes the nature of the program to one of non-adventure. Fundamental to the outdoor adventure experience is uncertainty of outcome and some level of anxiety concerning that outcome. Adequate measurements will help identify the sources and magnitude of anxiety producing experiences. It will be up to the program administrator and instructors to decide which anxiety producing stimuli are central to accomplishing the objectives of the program and which are not. Based on this information certain experiences within the programs may be eliminated while others may be emphasized. Ultimately, program administrators can use this information to create a program which is more effective in accomplishing stated objectives.

Ewert (1986a) stated that people initially come to adventure education programs expecting a high degree of safety and a minimum degree of exposure to *unnecessary* risk.

They also expect an appropriate alignment of activities with program objectives. Understanding anxiety components in adventure programs is certainly essential in meeting student expectations.

Indices of participant anxiety have distinct practical benefits to educators as well as researchers and administrators (Ewert, 1989). Adventure educators often work closely with students in unusual settings. These settings frequently involve inaccessible or remote places with little or no contact to base camps. Such situations often require the practitioner to make decisions without the benefit of input from administrators or other professionals. Since many of the environments in which adventure activities take place are anxiety producing, discerning sources of student anxiety would help the practitioner conduct a safe, productive learning experience.

In addition, leadership studies suggest that interpersonal skills are an important ingredient to adventure educators. Since anxiety is a deeply personal experience, it behooves the instructor to understand what situations or experiences are likely to elicit anxiety responses in their students. Ewert (1989) stated a lack of connectedness between the use of fear or stress and the hoped-for results is detrimental to the student's trust of an instructor.

Literature Review

Fear, anxiety and stress are related constructs. Hackford and Spielberger (1989) notes stress is a complex psychobiological process involving stressors, perceptions of threat, and emotional responses. Iso-Ahola (1986) discussed physiological and psychological responses to stress. Ewert defined stress as a condition which arouses anxiety and fear, identifying stress as the "trigger" of

fear. Psychological literature does not consistently make distinctions between the terms fear and anxiety. However, fear has generally been associated with alarm or disquiet emerging from a specific source of perceived threat, and anxiety is often thought of as a feeling of apprehension unrelated to a tangible source of stimulation. (Hauck, 1975). For the purpose of this paper, there will be no distinction made between fear and anxiety.

Iso-Ahola (1986) contrasted arousal and anxiety. Arousal can be thought of as a level of mental activity ranging from coma to a highly agitated state. Anxiety may be defined as excessive arousal as represented in the Figure 1.

Fundamental to the anxiety response is the *perception* of a stressor (Hackford & Spielberger, 1989). The stressor is the trigger

mechanism that induces anxiety. Stressors in adventure based education programs may be perceptions of risk which can be social, such as not being accepted into the group; physical, such as fast moving water or falling; or psychological such as being fearful about not having enough training. It is important to note that the stressors may be real, perhaps such as knowing one is skiing in an avalanche area, or imagined, such as being afraid of falling off a challenge course element while connected to a complete belay chain with an experienced belayer. In short, adventure educators hope to accomplish stated educational objectives by manipulating student anxiety levels through exposing them to unique physical and social environments. Quantitative measures of perceived anxiety represent one method of gaining insight into the anxiety response.

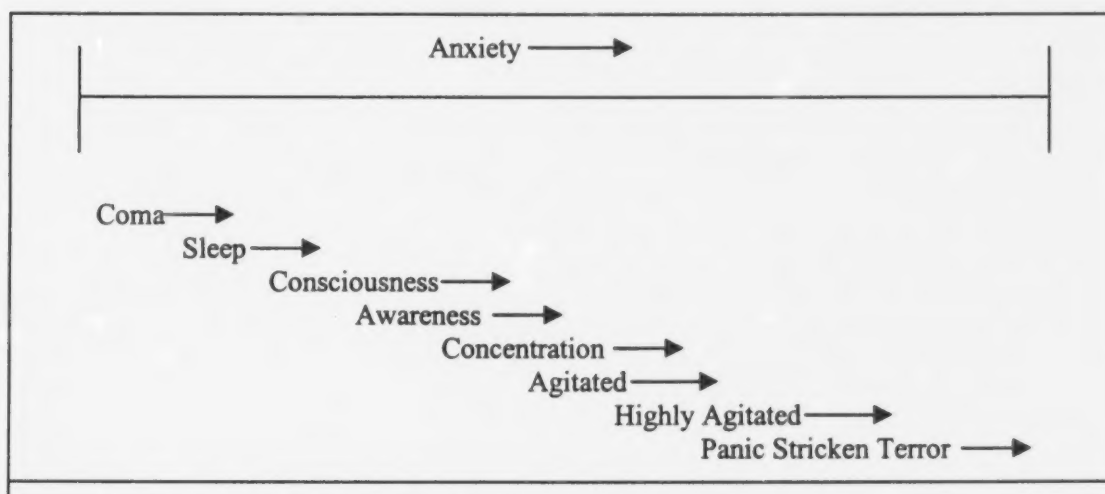


Figure 1. Iso-Ahola concentration continuum.

Classifying Anxiety in Adventure Education

There is agreement in the literature that sources of anxiety for individuals involved

in adventure education programs include factors related to environmental and sociological issues (Ewert 1985, 1986a; Priest, 1992; Ford and Blanchard, 1993). However, the literature suggests that the two factor model of environmental issues and sociological issues is too broad. Ford & Blanchard (1993) discussed physiological and environmental issues, however, both were broken down into several aspects. Environmental issues included the need for adequate rest, nutrition, maintenance of body temperatures, and others. Psychological needs include a sense of belonging, security, a need for the respect of other group members and individual differences. Ewert (1986a) created a 6 factor model of anxieties in the outdoor environment: 1) lack of control, such as being fearful about being physically trapped, 2) personal inadequacies, like making wrong decisions or letting oneself down 3) homeostasis such as temperature extremes, 4) personal skills, such as not having enough strength or not having enough training 5) level of comfort, e.g. lack of sleep or inadequate clothing and 6) program inadequacies such as instructor impatience or not enough food. Of these six factors, lack of control, homeostasis, and program inadequacies are related to the environment and personal inadequacies; personal skills and level of comfort are related to psychological concerns. Based on a review of research, and feedback from a panel of experts, a 4 factor model is proposed for this study. The factors include: 1) level of control, 2) program inadequacies, 3) personal inadequacies, 4) level of comfort.

Measurement of Attitudes

An attitude may be defined as a set of beliefs concerning a perceived stimulus. In measuring an attitude one seeks to assign numerical values to responses, using valid and reliable instruments, which represent the subject's perceptions or feelings at that time. Shaw and Wright (1967) explained that if attitudes concerning a given object, or class of objects are known it can be utilized with situational and other dispositional variables to predict and explain responses of the person to that object or class of objects. Martlett (1972) described the process of developing a Thurstone scale: The process of devising Thurstone's equal appearing interval scale involves collecting and editing opinions relating to the specific attitude. A list of items are developed, then sorted on a scale representing the item variable. Items are assigned a certain value and some are eliminated. Finally, a pool of approximately 20 items is selected and placed evenly throughout the scale.

Likert (1932) developed the summated scales system whereby a large number of items were generated which represented an attitude to be measured. The items are placed on a five point scale in a response framework ranging from strongly agree to strongly disagree, or strongly approve to strongly disapprove. The sum of item scores is calculated for statistical analysis. Likert suggested that it is necessary to generate more items than are likely to be needed because elimination of some is inevitable. The summated scales technique assumes that the scores vary as the subjects' attitudes vary. Nunally (1967) reported that Likert scales are flexible for measurement of several types of attitudes and generally yield high reliability and are easily constructed. Smith (1978) concurred with Jensen that the Thurstone method of scaling is labor intensive, particularly in obtaining

judges to evaluate item pools. For these reasons most of the instruments developed and used in assessing attitudes of participants in outdoor education and adventure education settings, including Ewert's (1986a) Situational Fears Inventory (SFI), employ Likert scaling techniques.

Likert-type scaling may employ different response frameworks. They may be limited choice frameworks ranging from 3 to 11. Figures 2 and 3 are examples of 3 and 5 point scales. Nine point and eleven point scales have been used in an attempt to increase the sensitivity of the scale. It appears that scales over seven points confuse subjects.

Semantic differential scales are sometimes used in adventure education studies. The semantic differential technique is a 7

point scale anchored by bipolar statements. The subjects are asked to place an "X" on the continuum in the place that best represents their feelings or attitudes concerning that statement. Figure 4 depicts a semantic differential scale.

Priest (1992) used a continuum method semantic differential scale identical to the scaling method employed by Ewert's (1986a) SFI to explore the factors of an adventure experience.

The type of scaling method used in this study is the Certainty method. Warren, Klonglan and Sabri (1969) introduced the Certainty Scale technique, which requires the respondent to make two decisions, one of direction and one of intensity. The scale appears to have the simplicity of a 5 point

Agree ____	Undecided ____	Disagree ____
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Figure 2. 3-point Likert scale.

Strongly Agree ____	Agree ____	Undecided ____	Disagree ____	Strongly Disagree ____
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Figure 3. 5-point Likert scale.

	Difficult Easy Clean Dirty
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Figure 4. Semantic differential scale.

response framework, but it maintains the sensitivity of a 10 point response framework. An example of the Certainty scaling method may be found in Figure 5. Instrumentation in outdoor education and adventure education primarily involves measurement of attitudes concerning environmental issues and attitudes concerning self concept. Several studies within sport psychology literature address measurement of the anxiety response. However, there is a paucity of studies in adventure education which specifically focus on measurement techniques. Notable exceptions include work done on the Situational Fears Inventory (SFI) (Ewert 1985, 1986b; Young & Ewert 1991; Young, Quinn, & Steele, 1994). Much of the activity in instrumentation in adventure education has occurred in the self concept area. Historically, psychological instruments were employed in adventure education studies in their original form or altered to become more specific to the environment under study. Spielberger's State Trait Anxiety Inventory (STAI) is an example of such an instrument. Few instruments were developed in outdoor education or adventure education expressly for use in those specific situations. A rare example is Tholkes' (1994) study of state anxiety of ropes course participants.

Methods

The purposes of this study were to develop a valid and reliable instrument to measure situational fears in a resident outdoor adventure education setting, and to confirm four underlying factors which contribute to anxiety in such settings. The Outdoor Education Practicum Questionnaire (OEP Questionnaire) was developed by the researcher based on Ewert's Situational Fears Inventory (1985). The research methodology used in this study was for purposes of instrument development and was descriptive survey research.

Subject Selection, Population/Sample

The population of the study was students from The State University of New York (SUNY) College at Cortland enrolled in the physical education major teaching certification program and students enrolled in the recreation program. Students who registered for PED 308, and REC 370, Outdoor Education Practicum (OEP) during the summers of 1993, 1994 and 1995 were included in the study. PED 308 and REC 370 courses are identical in length and similar in content. Both courses require a six day in-camp experience which focuses on hard skill development followed by a six day wilderness trip experience. The courses are conducted at

I am anxious or fearful about						
Being unable to control social environment	Agree	minimally agree or disagree		strongly agree or disagree		
	Disagree	1	2	3	4	5

Figure 5. Certainty scale.

SUNY College at Cortland's Outdoor Education Center located on Raquette Lake in the Adirondack Park in Northern New York State.

Students registered in May and June 1993 sessions of PED 308 were queried concerning the structure and content of the OEP Questionnaire prior to exposure of the instrument to the Panel of Experts. Pre-test subjects were those students enrolled in August 1993 session of PED 308, $N=54$. The accessible population for the pilot test portion of this study were students registered in PED 308 and REC 370 during the summer terms of 1994 and 1995, $N=440$. Subjects ages ranged from 18 years to 52 years with an average age of 22.6 years. Sixty-three percent of the sample were male 63% ($N=271$) and 36% were female ($N=158$). The overwhelming majority of subjects were White, with only a few Hispanics and African Americans. There were no Native Americans represented in the data set.

Instrumentation

The instrument used in the pre-test was the Outdoor Education Practicum Questionnaire. The instrument, created by the researcher, is a 51 item questionnaire designed to measure perceived anxiety in an adventure education setting. The OEP Questionnaire is based on Ewert's Situational Fears Inventory (SFI) (1985). The SFI is the only known instrument prior to the OEP Questionnaire *designed* to measure perceived anxiety in the adventure education setting. The SFI has been used in several studies which have provided insight into the construct of anxiety in an adventure education setting (Ewert 1985, 1986a, 1988, 1989; Young, 1991, Young, et al., 1994).

Development of the Outdoor Education Practicum Questionnaire

Item development of the OEP Questionnaire was influenced by Ewert's (1986a) work in which he extracted six dimensions of subject perceptions of anxiety in the adventure education setting. The six dimension accounted for over 70% of the variance, with the first two dimensions accounting for over 50% of the variance, suggesting a six factor model is too narrow. A study by Young, et al., (1994) was designed to show relationships between the Certainty method of scaling and the Continuum method of scaling. In that study, the SFI was broken down into two subscales labeled Environmental Concerns and Sociological Concerns. There is agreement in the literature that sources of anxieties for individuals involved in adventure education programs include factors related to environmental and sociological issues (Ewert 1985, 1986a; Priest, 1992; Ford and Blanchard, 1993). However, the literature suggests that the two factor model of environmental issues and sociological issues is too broad. Ford & Blanchard (1993) discussed physiological and environmental issues, however, there were several aspects of each one. Environmental issues included the need for adequate rest, nutrition, maintenance of body temperatures, and others. Psychological needs include a sense of belonging, security, a need for the respect of other group members and individual differences.

This study proposed a four factor model which represents perceived levels of anxiety in the adventure education setting. These factors, or dimensions include: 1) level of control, 2) program inadequacies, 3) personal inadequacies, 4) level of comfort.

Level of Control Dimension

The level of control dimension was created based on Ewert's (1986a) study in which he found that six dimensions explained 70% of the variance in anxiety levels of participants in an adventure course. The dimension "lack of control" represented over 40% of the variance, with an Eigen value of 11.55. According to this study, issues of control appear to be contributing a great deal to levels of participant anxieties. Csikszentmihalyi (1975) discussed the importance of the participant believing they are in control of an experience in order for a "flow" experience to occur.

Program Inadequacies Dimension

Similarly, the program inadequacies dimension is supported by the Ewert (1986a) study in which program inadequacies emerged as a factor of participant anxieties in adventure programs. Ford and Blanchard (1993) discussed several needs of students in adventure based programs such as needs for shelter, nutrition and others. In adventure based education programs, students often have little to say about where the program takes place, what kind of living accommodations will be provided, and what will be included in their diet. Program administrators and educators often make these decisions for the students. Inadequacies in these areas of programming can have effects on student anxiety levels.

Personal Inadequacies Dimension

Priest (1989), supported a model of participant engagement in adventure activities that included individual and activity/setting attributes of such programs. Three of the four individual attributes and one of the three activity/setting attributes related directly to personal abilities of participants. Ewert

(1986a) found that personal inadequacies was one of six factors representing participant anxieties in adventure settings. Ford and Blanchard (1993) discussed the importance of students' needs for fitting in with the group.

The need to fit in with the group, or the feeling of being a part of the social structure of the group is characteristic of individuals participating in adventure education courses. Individuals bring into adventure education courses perceptions of their own physical and social abilities. If they perceive that the challenges in an adventure education course are greater than their level of competence, anxieties are likely to occur.

Level of Comfort Dimension

Priest (1992) discussed several levels of engagement in risk recreation experiences.

When the level of challenge is consistent with the participant's perceived skill level a "peak adventure" experience occurs. If the experience becomes too difficult, misadventure is often the result. Misadventure is characterized by participants becoming physically uncomfortable, such as falling into cold water, or socially uncomfortable, such as being embarrassed in front of other group members. Csikszentmihalyi (1975, p. 36) discussed a "flow" experience which exists when the participant matches the task difficulty with skill levels. The resultant "flow" experience is characterized, among other things, by a feeling of comfort and enjoyment, and a lack of anxiety. Ewert (1986a) found that the level of participant comfort was one of six factors that make up perceived levels of anxiety in adventure education experiences.

From a review of the literature it was determined that four dimensions account for most of the variance of anxiety in the adventure education setting. These dimensions include: 1) level of control, 2) program inadequacies, 3) personal inadequacies, and 4) level

of comfort.

Scaling methods

The scaling method for the present study was the certainty method of scaling. Benefits of the certainty method include greater sensitivity and variability of the measure (Warren, 1969), a numerical expression of an elevated level of anxiety, and ease in codifying data. The certainty method of scaling requires the respondent to make two decisions. First, they must decide if they are concerned or not concerned about the item statement, indicated by circling "agree" or "disagree" on the response framework. Next they must decide on the intensity of their agreement or disagreement. The respondent then circles a number between 1 and 5 indicating the strength of their decision. Number 5 is the strongest response. The responses are recorded in the following response framework:

A		1	2	3	4	5
D						

Numerical values are then assigned to the responses. The range on the continuum is represented below:

ROW 1: D5 D4 D3 D2 D1 A1 A2 A3
A4 A5

ROW 2: 1 2 3 4 5 6 7 8 9 10

An even number continuum is used because it removes the possibility of a middle response between agree and disagree. Since attitudes concerning anxiety are deeply personal, forced choice was deemed necessary.

Validity and Reliability

Validity and reliability of the OEP Questionnaire were established through a six-step approach. Content validity was established through generating item variables by the following methods: 1) the researcher changed/edited items on the Situational Fears Inventory (SFI), 2) students enrolled in the Outdoor Education Practicum in May and June, 1993 were asked for feedback, 3) the OEP Questionnaire was presented to a panel of experts, 4) individual item variables were placed on one of the proposed latent variables and 5) a pre-test was employed in August 1993, ($N=54$). A sixth step involving a pilot test ($N=433$), was used to generate data useful in determining reliability and construct validity of the questionnaire.

Step 1

In this study the OEP Questionnaire is based on the 33 item form of Ewert's Situational Fears Inventory (SFI). Through a review of literature the researcher theorized the existence of four dimensions representing situational fears in resident outdoor adventure education settings. Twenty eight of Ewert's items on the SFI appeared, in part, to represent aspects of the four theorized dimensions. Minimal changes were made to these items making them consistent in form with other items on the questionnaire. Based on the researcher's professional experience in the adventure education field and within PED 308, 15 new items were created, bringing the total items to 49.

Step 2

Six groups of two or three physical education majors ($N=16$) enrolled in PED 308 in May and June, 1993 were asked to comment on the 49 item version of the OEP Questionnaire at various times during the experience. Students were directed to make

remarks about clarity of directions, question clearness and readability, redundancies, and addition of new items. Many comments concerned additions of new items and conditions of testing. As a result of student interviews the OEP Questionnaire length was expanded to 51 items; eight items were edited and two were added.

Step 3

Ghiselli (1981), stated that the answer to the content validity question is based on professional judgement. In order to estimate the content validity of the OEP Questionnaire a panel of experts was established. After refinements were made based on student comments, the instrument was administered to a panel of 10 experts. Three individuals experienced in instrument design were asked to comment on clarity of directions, wording of individual items and the general appearance and construction of the instrument. Three others were professional outdoor educators experienced in the Outdoor Education Practicum. They were asked to review the appropriateness of items and suggest new items which might affect the four theorized latent variables. A third group of four experts were professional outdoor educators not experienced with OEP programs. They commented on the general applicability to resident outdoor adventure education programs. Feedback from the panel of experts resulted in the rewording of 12 items, addition of 1 item, deletion of three items, and splitting of three items. The length of the OEP Questionnaire after changes totaled 52.

Step 4

Items were placed on certain latent variables for one or more of the following reasons: 1) they were a part of Ewert's (1986a) Situational Fears Inventory (SFI) and loaded on a similar latent variable found in his study,

2) variations of some items on the SFI were adapted and used on Young and Ewert's (1991) 33 item version of the SFI, 3) items were placed by the researcher based on professional judgement, and 4) items were placed due to discussions with members of the panel of experts. This completed changes made to the OEP Questionnaire prior to the pre-test.

Step 5

Administration of a pre-test to 54 physical education students took place in August, 1993 ($N=54$). Students were randomly assigned to four different testing areas. Once the students were situated at the tables the instrument was distributed, directions read, and an opportunity for questions was provided. Upon completion, the subjects were asked to be certain the attribute data section of the questionnaire was completed. Data analysis of pre-test data included descriptive statistics consisting of measures of central tendency, standard deviation and range. To determine if there were any redundant items in the pre-test instrument, a correlation matrix was created. Any variables correlating above .90 were judged redundant. The items BEING SEXUALLY HARASSED BY PEERS and BEING SEXUALLY HARASSED BY INSTRUCTORS correlated at .91. As a result the items were combined and a new item was created, labeled BEING SEXUALLY HARASSED. However, the two original items BEING SEXUALLY HARASSED BY PEERS and BEING SEXUALLY HARASSED BY INSTRUCTORS were retained within a subset of the field test data ($N=294$) because of feedback from members of the panel of experts who considered the distinction by population important.

The next highest correlation (.81) was in items UNQUALIFIED INSTRUCTORS and UNFRIENDLY INSTRUCTORS. These items appeared in sequence on the pre-test

instrument. The researcher acknowledged the similarity of these items, however, based on feedback from certain members of the panel, it was determined to leave both items on the field test instrument unchanged. They have been repositioned within the program inadequacies subscale. Inclusion of the new item "BEING SEXUALLY HARASSED" changed the length of the OEP Questionnaire to 53 items. This completed changes to the OEP questionnaire prior to the field test.

Step 6

To substantiate the reliability of the OEP Questionnaire and to gain indicators of content validity, a field test was conducted during 2 consecutive summers, 1994 and 1995 ($N=433$). Of these subjects, 76% were Physical Education majors and 24% were Recreation majors. 53% were collected in the summer of 1994 and 47% were collected in 1995. t -tests were conducted to determine if there were any significant differences between 1994 and 1995 subjects, and between Recreation and Physical Education majors. No significant differences were noted ($p \geq .01$), so the data was pooled for analysis.

Reliability

The reliability of the OEP Questionnaire is based on the degree to which items on the questionnaire intercorrelate with each other, or are internally consistent. To assess preliminary reliability, Cronbach's alpha, a measure of internal consistency was used on the 52 item pre-test instrument and each of the 4 subscales. The alpha values generated from the pre-test helped determine overall reliability of the scale and subscales and the stability of each item within the subscales. To further substantiate the reliability of the OEP Questionnaire, an identical process was used on the field test data.

Construct Validity

Construct validity is concerned with the degree to which the instrument actually measures what it purports to measure. Byrne (1989), stated that in social science, researchers are often interested in studying constructs that cannot be directly observed. Examples of these latent variables include anxiety, self concept and others. The technique most commonly used to discover underlying relationships between latent variables is factor analysis. There are two types of factor analysis, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Exploratory factor analysis assumes that underlying dimensions or factors can be used to explain complex phenomenon. It is an intercorrelational technique that uses correlations between observable variables to explain relationships on factors not directly observable. Exploratory factor analysis is useful for identifying underlying factors based on intercorrelations between observed variables.

Confirmatory factor analysis assumes the researcher has some knowledge of the latent variables based on theory, empirical research or a combination of both (Byrne, 1989). Based on that knowledge, the researcher creates a model intended to explain the relationships between observed (exogenous) variables and latent (endogenous) variables. The model should specify which observed variables load on specific latent variables and which of the latent variables are correlated. Stevens (1996) stated that confirmatory factor analysis techniques permit the researcher to "force" certain observed variables to load on specific latent variables. He believed this to be a limitation of the EFA model. Confirmatory factor analysis permits the researcher to specify the model in advance by determining which factors load on different latent variables and what the relationships among the latent variables are.

For the purpose of this study confirmatory factor analysis was used because there is empirical and theoretical evidence to support the existence of latent variables which constitute perceived levels of anxiety in the adventure education setting. Each individual item on the OEP Questionnaire represents a distinct observed variable. Variables included in the analysis were all variables in the complete data set $K=51$.

The latent variables include: 1) level of control, 2) program inadequacies, 3) personal inadequacies and 4) level of comfort.

In the proposed theoretical model, 51 observed variables load on four latent variables. Confirmatory factor analysis takes into account errors associated with each observed variable. According to Stevens (1996) the error terms contain measurement error due to the lack of reliability of the observed variables, in addition to unobserved or unique variance and are referred to as measurement errors. Arrows on the far left of the model indicate that the observed variables are effected by error as well as the factors. The arrows which point from the latent factors to the observed variables indicate factor loadings for that specific variable. Factor loadings are significant in that they give some indication of how well the model fits the data. The arrows traveling between each of the latent variables represent relationships between the latent variables and are expressed as correlations.

Overall fit estimates and parameter estimates demonstrate how well the model fits the data. Parameter estimates are concerned with individual model parameters such as factor loadings or correlations and error (Stevens, 1996) and address the substantive model fit. Overall fit estimates are concerned with how well the model, considered in totality, fits the data.

Stevens (1996) suggested that while interpreting the fit of the model, the researcher should examine the values of individual parameter estimates in addition to the overall fit. Individual parameter estimates that were considered in this study were error estimates on each item, factor loadings between each item and the appropriate predetermined latent variable, and correlations between latent variables. The overall fit indicators employed for this study were the chi-square statistic and the root mean square error of approximation (RMSEA). The chi-square statistic is perhaps the most well known measure of overall fit. It is used to test the hypothesis that the population matrix is equal to the matrix produced from the model (Stevens, 1996). It is, however, very sensitive to sample size. As the sample size increases the value of the chi-square statistic increases to the point where most any hypothesis would be rejected. Because of this, Joreskog (1993) recommended that the chi-square statistic be regarded as a goodness (or badness)-of-fit index rather than a test statistic.

The RMSEA is bounded below by zero, zero denoting a perfect fit. Furthermore, a value on the RMSEA of about .05 or less would indicate a close fit of the model in relation to the degrees of freedom, and that a value of about .08 or less for the RMSEA would indicate a reasonable error of approximation. (Browne & Cudek, 1993).

For the purposes of this study, a linear structural equation model was created to validate the OEP questionnaire. It is proposed that the 51 items, or observed variables on the OEP questionnaire will load on 4 latent variables. Confirmatory factor analysis was conducted using maximum likelihood as the population parameter estimator. The overall goodness of fit indicators used were the chi-square statistic and the RMSEA. Degrees of

freedom and numbers of parameters were used to calculate the value of the chi-square statistic. An RMSEA of .08 or less was considered acceptable when judging the overall fit of the proposed model. In addition, factor loadings, the correlation between latent variables and error estimates were considered as parameter estimates.

Findings

Objective 1

The first objective of the study was to develop a reliable instrument designed to measure perceived anxiety in the outdoor adventure education setting.

Preliminary reliability estimates were calculated using Cronbach's alpha, an internal

consistency technique applied to the pre-test data. Reliability coefficients were calculated for the 52 item instrument and again on each of the subscales to gain an indicator of reliability for the entire instrument and for each of the subscales. Results are found in Table 1.

Nunally (1967), asserts that .50 is the minimum level of acceptance when assessing reliability of new instruments. The values gained from the analysis revealed coefficients well above Nunally's .50 criteria. Further evaluation of reliability was gained by employing a procedure with the field test data identical to that used with the pre-test data. Cronbach's alpha was utilized on the entire scale and each of the subscales. Values may be found in Table 2. Based on this analysis the overall scale and each of the subscales were determined to be sufficiently reliable for students registered for OEP courses.

Table 1

Internal consistency, pre-test data, Cronbach alpha values, entire scale, subscales

Entire Scale	Control	Program Inadequacy	Personal Inadequacy	Comfort
.9330	.8160	.8933	.8682	.8661
K ^a = 52	K= 15	K= 10	K= 11	K= 16

Note. N = 54

^aK = Number of item variables

Table 2

Internal consistency, field test data, scale, subscales, reliability coefficients Cronbach alpha values

	Entire scale	Control	Program inadequacy	Personal inadequacy	Comfort
Data set	.9520	.8481	.8811	.8957	.8925
	K ^a = 51	K = 14	K = 10	K = 11	K = 16

Note. N = 433

^aK = Number of item variables

Objective 2

Objective 2 was to develop a valid instrument designed to measure perceived anxiety in the outdoor adventure education setting.

The validity of the OEP Questionnaire was established through a several step process. A theoretical model of perceived levels of anxiety in adventure education programs was constructed by surveying the literature, questioning students similar to those used in the study, and exposing the OEP Questionnaire to a panel of experts. A statistical model was created by conducting a field test ($N=433$) and conducting confirmatory factor analysis with the data.

Theoretical Model

The theoretical model was gleaned by examining current research in the area of fear and anxiety in adventure programs. The OEP Questionnaire is based on Ewert's (1985) Situational Fears Inventory, and the theoretical model used in this study is based largely on studies that have used the SFI. The four theorized latent variables include: 1) level of control, 2) program inadequacies, 3) personal inadequacies and 4) level of comfort.

Objective 3

The third objective was to develop a theoretical model to empirically evaluate perceived anxiety in the outdoor adventure education setting.

Statistical Model

For the purpose of this study confirmatory factor analysis was used because there is empirical and theoretical evidence to support the existence of latent variables which constitute perceived levels of anxiety in the adventure education setting. The four theorized latent variables include: 1) level of control, 2) pro-

gram inadequacies, 3) personal inadequacies and 4) level of comfort.

Confirmatory factor analysis was used for analysis of the field test data ($N=433$). The 51 item version was tested using RAMONA, a confirmatory factor analysis computer program. The statistical model is presented in Figure 4.

The following assumptions were made on the statistical model: 1) there are four latent variables, 2) the four latent variables are correlated, 3) there are 51 observed variables, 4) the 51 observed variables load onto the latent variables, 5) each observed variable loads onto only one latent variable, 6) measurement error is taken into account for each observed variable, and 7) the measurement errors are uncorrelated. The analysis for the statistical model was done in five steps. 1) The population parameters were estimated from the sample using maximum likelihood techniques, 2) correlation coefficients were generated to determine relationships between each of the latent variables, 3) factor loadings between the 51 observed variables and the four latent variables were calculated, 4) error estimates were obtained on each of the observed variables, and 5) estimators of overall fit of the model were determined.

Parameter estimates

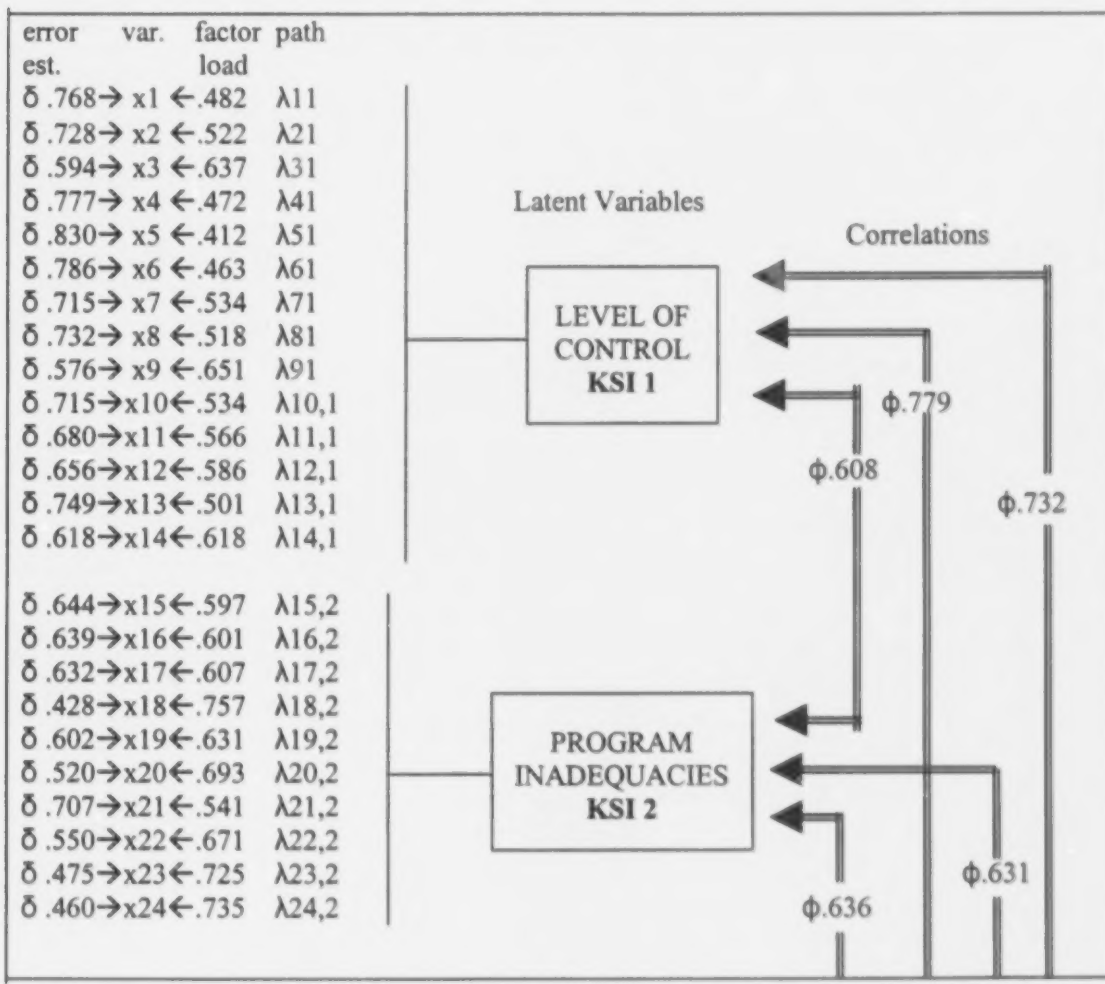
Data analysis was conducted using the RAMONA statistical package. Maximum likelihood techniques were used to generate population parameter estimates based on the sample correlation matrix. Error residuals were calculated, indicating the relationship between the estimated population and the sample. The values of the residual matrix indicate a good fit between the estimated population values and the sample values.

The model specified that correlations exist between the four endogenous variables. These correlations are listed in Table 3, and are specified in Figure 4 by ϕ .

Table 3

Latent variable correlations, statistical model, field test data

Path	Point est.	Standard error	t-value
Control $\leftrightarrow$ program inadequacies	0.608	0.038	16.19
Control $\leftrightarrow$ personal inadequacies	0.779	0.026	30.19
Control $\leftrightarrow$ level of comfort	0.732	0.029	24.90
Program inadequacies $\leftrightarrow$ personal inadequacies	0.636	0.034	18.63
Program inadequacies $\leftrightarrow$ level of comfort	0.631	0.035	18.18
Personal inadequacies $\leftrightarrow$ level of comfort	0.706	0.029	24.04



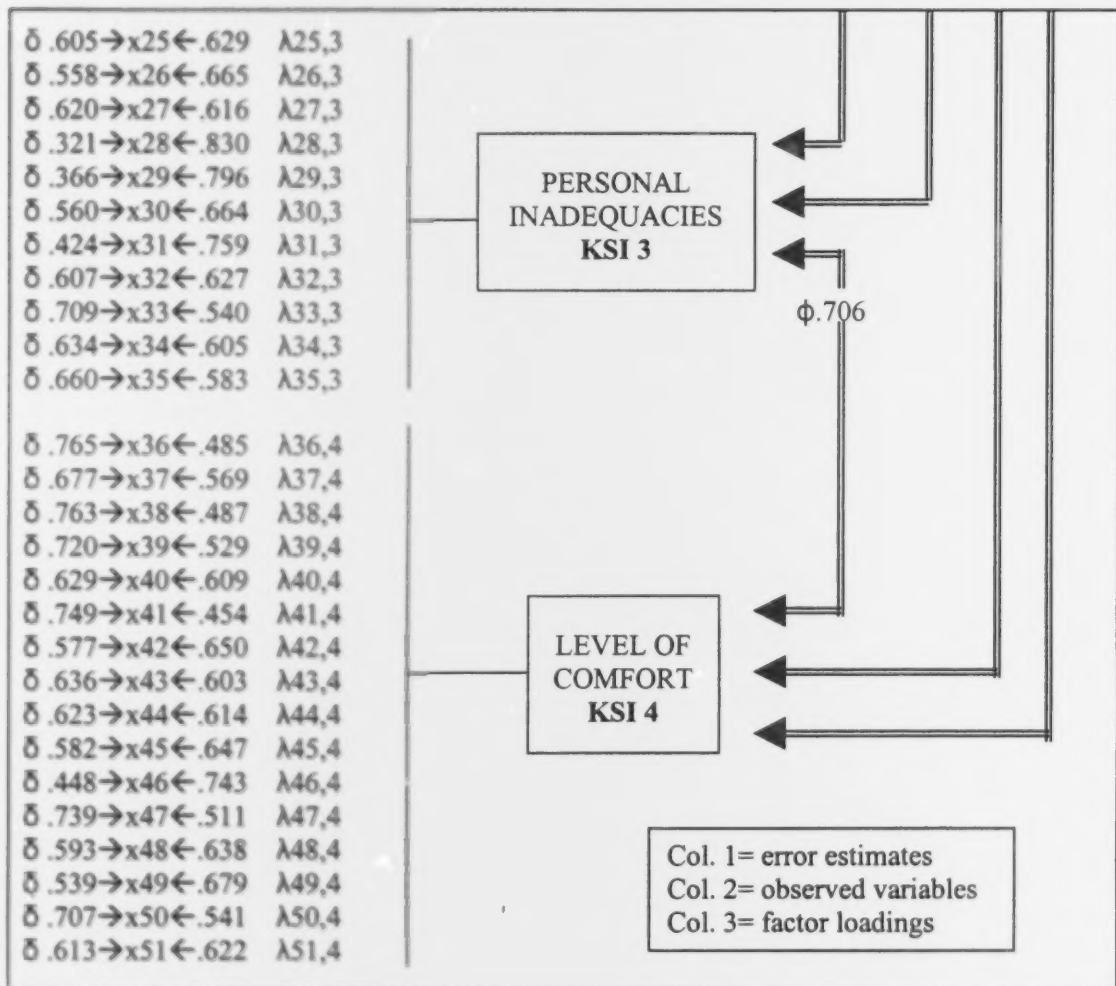


Figure 4. Statistical model.

Latent variable correlations

All latent variables were positively correlated with one another indicating shared variance. The correlations ranged from .608 to .779. The strongest correlation was between Level of Control and Personal Inadequacies (.779) demonstrating a clear relationship between the two latent variables. Level of Control and Level of Comfort correlated strongly at .732. The weakest correlation occurred between Level of Control and Program Inadequacies (.608), indicating it is the most distinct latent variable of the four, however it is still considered to be high. Strong correlations existed between Program Inadequacies and Personal Inadequacies (.636), and between Personal Inadequacies and Level of Comfort (.631). Similarly, a strong correlation exists between the Personal Inadequacies dimension and the Level of Comfort dimension. The data suggests that participant perceptions of anxiety in adventure education programs are related to one another. However, it is consistent with past research (Ewert 1986a, 1989; Young & Ewert, 1991; Ford & Blanchard, 1993) which suggests a distinction between environmental and sociological anxieties.

The standard error values range from .026 to .038, indicating little error in the correlation values. All of the *t*-values are >2.0, ranging from 16.19 to 30.19. Stevens (1996) stated that *t*-values over 2.0 are commonly taken to be significant and they have been judged so here.

Factor loadings

Confirmatory factor analysis techniques requires the researcher to predetermine which exogenous (observed) variables ($N=51$) will load on certain endogenous (latent) variables ($N=4$). Factor loadings indicate the degree to which the latent variables, or factors

affect the observed variables, or items. These values are indicated by the alpha symbol (α) and are found on the statistical model, Figure 4. Standard error values are low indicating a minimum of error in the factor loading values.

All observed variables were "forced" to load on specific latent variables. The values indicate how well each of them do so. A factor loading of >.4 is considered to be significant for the purposes of this study. Factor loadings for variables X_1 through X_{14} , which loaded on the Level of Control latent variable range from .412 to .651 indicating moderate fits of these items on that dimension. Those variables loading on the Program Inadequacies dimension showed stronger relationships, loading between .541 and .757. Most of the item variables on the Program Inadequacies dimension were related to environmental issues. Stronger factor loadings on this latent variable are consistent with past research suggesting students are anxious about environmental issues in adventure based programs.

Variables designed to load on the Personal Inadequacies dimension vary between .540 and .830 indicating strong relationships between observed and latent variables. Values of factor loading on the Level of Comfort dimension ranged from .454 to .650 indicating a moderate fit. Overall, the factor loadings ranged from .412 to .830 indicating the observed variables had significant loadings on the factors they were designed to measure.

Error estimates

Error values have been calculated and are represented by the delta (δ) symbol in Figure 4. The error values indicate the measurement error associated with the observed variables. Large values indicate a greater amount of error. The range of error values associated with the latent variables are: 1)

Level of Control, from .594 to .830, 2) Program Inadequacies, from .428 to .707, 3) Personal Inadequacies from .321 to .709, and 4) Level of Comfort, from .765 to .448. The overall scale ranged from .321 to .830. Thirty-six values were above 0.60 indicating likelihood that many of the observed variables would also load on other latent variables suggesting a different latent variable structure on the OEP Questionnaire.

Overall model fit

The overall fit estimators are used to describe how well the total model, including all parameters, fits the data. This model involved 108 parameters: 51 error estimates, 51 factor loadings and 6 correlations between latent variables. The model had 1,218 degrees of freedom.

The overall fit estimators used in the study were the Chi Square statistic (χ^2) and the Root Mean Square Error of Approximation (RMSEA)

The χ^2 statistic of 4478 with an N of 433 and 108 parameters was significant at $p < .05$ indicating that the model does not adequately account for the covariance among the variables, however, the χ^2 statistic is effected by sample size, and should not be interpreted as the only indicator of model fit. It is most useful when comparing different models. The RMSEA value was .079 indicating a moderate fit of the model. Browne & Cudek (1989) indicated that a perfect fit of the model would result in a 0.0 RMSEA, however, a value of 0.05 indicates a near fit, and values $< .08$ indicate an adequate fit.

Conclusions and Recommendations

Objective 1 of the study was to develop a reliable instrument designed to measure perceived levels of anxiety in resident adventure education programs. Initial esti-

mates of reliability of the OEP Questionnaire were established by calculating Cronbach's alpha values on each of the four subscales, or latent variables on a pre-test ($N=54$). Each of the subscales had alpha values greater than 0.80 indicating good internal consistency.

An identical procedure was used on the field test data ($N=433$). Cronbach's alpha values for each of the subscales were > 0.84 , indicating acceptable levels of internal consistency. Based on the analysis, the subscales on the OEP questionnaire were judged as sufficiently reliable within the OEP setting.

Objective 2 was to validate the OEP Questionnaire. This was accomplished by a several step process which focused on development of a theoretical model, and issues of content validity. Ewert's (1985) Situational Fears Inventory (SFI) served as the basis for the development of the OEP Questionnaire. Based on the 33 item form of the SFI and a survey of the literature, the researcher generated new items designed to load on the four theorized latent variables. Students enrolled in an OEP course in 1993 were then asked to give feedback concerning completeness and clarity of directions. Asking subjects similar to the test subjects to comment on the development of the instrument is an uncommon step in instrument development. However, in this study it was consider to be valuable. Comments by students concerning the OEP Questionnaire were helpful in creating and tailoring items, and in making the OEP Questionnaire appropriate for use with the target population.

A panel of experts was developed consisting of measurement experts, experienced outdoor leaders and OEP practicum staff ($N=10$). The panel was unusually large, and uniquely qualified to make comments on the OEP Questionnaire. It consisted of individuals who served in leadership positions within major adventure education organiza-

tions within the United States, such as Outward Bound, The Wilderness Education Association and Project Adventure. The panel included Alan Ewert, creator of the SFI, on which this work was based.

Based on this process, the theoretical model is considered to be representative of student anxieties in resident outdoor adventure education programs.

Objective 3 was to determine the factors associated with perceived fear levels in adventure education programs. This was accomplished by testing the theoretical model using confirmatory factor analysis on field test data. Objective 3 relates to construct validity of the OEP Questionnaire.

The field test occurred at OEP courses during the summers of 1994 and 1995 ($N=433$). Maximum likelihood techniques were used to generate population parameter estimates based on the field test sample correlation matrix. Error residuals were gained by comparing the difference between the estimated (population) correlation matrix and the observed (sample) correlation matrix. The residuals indicate the statistical relationship between the estimated population and the sample. The closer the values are to zero, the stronger the relationship between the estimated population parameter and the sample. The values of the residual matrix indicate a good statistical fit between the estimated population and the sample indicating a strong relationship between the sample and the estimated population parameter.

Strong positive correlations exist between all four latent variables. Error residuals are low, and t -values are well above 2.0. The correlation values are assumed to be representative of the relationships between the latent variables. Latent variable correlations, t -values and error residual values may be found on Table 3.

The Level of Control dimension shows the highest correlation values with other latent variables with the Personal Inadequacies dimension correlating the highest. It is reasonable to speculate that subjects will assert control over their own personal abilities. Similarly, they may try to assume control for their own level of comfort. Priest (1992) indicated that individuals seek to engage in adventure recreation experiences that are consistent with their perceived level of competence. This implies that participants will attempt to assume a degree of control over the engagement level within the experience. This is congruous with Ewert's (1989) opinion that humans seek a balance between personal abilities and individual challenges, and could explain why the level of control dimension in this study is highly correlated with other latent variables.

The items that show weak performance based on factor loadings in the 0.4 range and relatively large error indicators on the Control dimension include: BEING UNABLE TO CONTROL SOCIAL ENVIRONMENT, and BEING WITH PEOPLE I DON'T LIKE. Students may feel that this is a program inadequacy because program directors are largely responsible for the make-up of the group due to registration procedures or other practical concerns. The item BEING SEXUALLY HARASSED had a relatively weak loading. This item may load on the Level of Comfort dimension if it was free to do so.

The Level of Control dimension, relative to the remaining three dimensions showed the lowest factor loadings of individual items, and the highest correlations with other latent variables. The data support that there are elements of the control dimension in each of the other dimensions, however, to a lesser degree with Program Inadequacies. This is consistent with Csikszentmihalyi's (1975) work in which he discussed level of

control as a pervasive phenomenon in participant anxiety levels.

The Program Inadequacies dimension showed the lowest correlations with other latent variables indicating that it is the most distinct latent variable. This is not surprising in light of Ford and Blanchard's (1993) discussion of the distinction between physiological and psychological needs of students involved in adventure education programs. Furthermore, the distinction between environmental fears and social fears are well documented in anxiety research within adventure education (Ewert, 1985, 1986a, 1987, 1988; Ewert & Young, 1991; Priest, 1992; Young, et al., 1994). Most items within the program inadequacies dimension relate to environmental issues. Items found in the other three latent variables typically represent sociological issues.

There is a strong statistical relationship between the Personal Inadequacies dimension and the Level of Control dimension indicating shared variance. Again, this could be because students will try to assert some measure of control over their own personal inadequacies.

Items within the Personal Inadequacies dimension that showed strong performance were NOT PERFORMING UP TO GROUP EXPECTATIONS, NOT PERFORMING UP TO INSTRUCTOR EXPECTATIONS and LETTING OTHERS DOWN (respective factor loadings: .830, .796, and .759). All other items in this dimension loaded between .540 and .665. It is possible that the three items that loaded highly represent another distinct latent variable associated with disappointing group members.

The overall fit estimators used in the study were the Chi Square statistic (X^2) and the Root Mean Square Error of Approximation. The chi-square statistic of 4474.68 with

108 parameters and 1218 degrees of freedom indicate that the model does not fit the data.

However, the X^2 statistic is extremely sensitive to sample size. The larger the sample, the higher the X^2 statistic will become. Stevens (1996) stated that the chi-square statistic is very sensitive to sample size, so that with a large enough sample, almost any hypothesis would be rejected. Joreskog, (1989) believed that the chi-square statistic is most useful when comparing several models, which is not the case here. Given the relationships among latent variables it is not surprising the X^2 statistic does not support the theoretical model. More confidence should be placed in alternative fit indexes.

The Root Mean Square error of Association (RMSEA) is a fit statistic that is less sensitive to sample size and is more appropriate for use in this study. The RMSEA value was .079 indicating a moderate fit of the model.

Analysis of the parameter estimates and the overall estimates support the proposed four factor model. However, the model fits the data only moderately. High correlations between the latent variables, moderate factor loadings and relatively high error estimates indicate that the variance in the data could perhaps be better explained by a different model.

Further Study

Instrument Development

Alternate models should be developed using exploratory factor analysis, then tested using confirmatory factor analysis techniques. Stevens (1996) stated that when assessing model fit, the researcher should hypothesize *at least one model apriori*. Theoretical knowledge in any one area may be ambiguous and more than one model may be tenable. Alternate models may be theorized and tested using

confirmatory factor analysis. Data in this study suggest there may be more than one viable alternate model. Several test criteria exist which permit testing of two or more models. Such models may load different observed variables onto the latent variable, or theorize different relationships between and among variables. This study suggests that exploration of the degree of control students will exert over an outdoor adventure experience is a viable avenue for future research.

Survey instruments such as the OEP Questionnaire, which are designed to measure attitudes can give preliminary insight into the phenomenon being measured. Additional valid and reliable instruments which measure other relevant attitudes which occur in adventure education settings are needed. Furthermore, self-report measures should be used with other types of measures when assessing levels of anxiety. Triangulation of measurement techniques is necessary to gain further insight into the construct of anxiety in adventure education settings. Development of measurement techniques other than self report instruments is recommended. Bunting (1993) has done research on anxiety in adventure settings using physiological measures of blood pressure and catecholamine production. She believed there are serious challenges in measuring physiological responses to adventure activities as the settings do not lend themselves well to collecting physiological data. Nevertheless, creative researchers need to take up the challenge of devising instrumentation for these settings. In addition, observational instrumentation can be developed and would be useful in conjunction with the OEP Questionnaire and certain physiological indicators. Observable characteristics of the anxiety response would need to be documented. Observers would need to be trained and inter-rater reliability would need to be ascertained. Studies which involve triangulation techniques of self reported measures, observations by trained researchers, and physiological

measures would contribute greatly to understanding anxiety in adventure education programs.

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OUTDOOR LEADER SELF-AWARENESS AND ITS RELATIONSHIP TO CO-LEADERS' PERCEPTIONS OF INFLUENCE

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Introduction

Preparing individuals to lead safe, enjoyable, and environmentally sound adventure education activities represents a critical issue among adventure education professionals (Cockrell, 1991; Petzoldt, 1974; Priest, 1987). Two important domains that must be addressed when training outdoor leaders are the development of technical skills and leadership skills. Technical skill development typically involves the physical aspects of outdoor leadership such as navigation, reading whitewater or climbing anchor placement. Leadership development includes topics such as small group management, conflict resolution, communication enhancement, and self-assessment.

An area of leadership development that has not received widespread attention, due to its subjectivity, resides in the realm of personality development. A potentially important personality characteristic is the role of leader self-awareness. The adventure education literature is devoid of empirical studies that focus on the characteristic of leader self-awareness.

One potential way to view the influence of leader self-awareness is through an analysis of leader power as perceived by co-leaders (Wagstaff, 1997). The co-leader relationship directly influences the development and behavior of a group (Winter, 1976). When leader dyads exhibit functional or dysfunctional behavior, group members react to the behaviors of the leaders. For example, if co-leaders cannot find a method to handle their dif-

ferences, the group sometimes mirrors leader behavior and experiences increased difficulty with intermember conflict and differentiation.

The purpose of this study was to examine the relationship between outdoor leader self-awareness and co-leaders' perceptions of leader influence. Self-awareness was based on the concept of self-actualization (Maslow, 1968, 1970, 1971). The construct of influence was operationalized as power (French & Raven, 1959).

The importance of leader self-awareness is explored in other fields, including management (Bennis, 1989; Covey, 1991; Kouzes and Posner, 1993) and psychology (Goleman, 1995). Bennis believes that a person must know him/herself well in order to become an effective leader. Kouzes and Posner equate high levels of leader self-knowledge with credibility. In psychology, the concept of self-awareness receives attention in the popular literature on emotional intelligence. Goleman (1995) addresses self-awareness as a necessary tool for psychological health. He explains that the term metacognition used by psychologists refers to an awareness of thought process, while metamood could be used to encompass the awareness of moods. Goleman prefers to use the broad term of self-awareness as an ongoing attention to one's internal states or metamood. He defines self-awareness as, "a self-reflexive, introspective attention to one's own experience, sometimes called mindfulness" (p. 315). A challenge for

researchers lies in assessing the depth or level of individual self-awareness and its relationship to the art of leadership.

The concept of power appears to play a critical role in influencing the co-leader relationship. Many definitions are available to explain the concept of power; however, for the purpose of this study, definitions and an instrument to measure power have been taken from the management literature. "Power is seen as the ability of one party to influence the attitudes and/or behavior of another" (Rahim & Buntzman, 1989, p. 197). Self-knowledge can shape personality, form character, instill confidence and develop inner strengths" (p. 15). Power can be defined as an influence or exchange relation operationalized by observing the behavior of two or more interacting persons (Stogdill, 1974).

French and Raven's (1959) description of the five types of power continues to be useful as a way of identifying the types of power. The five types of classic power are as follows:

Reward Power is the ability to give rewards.

Coercive Power is the ability to punish or threaten punishment.

Legitimate Power is based on the position one holds or is given.

Referent Power is when a person is liked or admired (charisma).

Expert Power is based on an individual's knowledge and skills.

For the purpose of this study, only referent and expert power are studied due to their idiosyncratic connection to personality. Referent and expert power, theoretically, appear to be the primary types of power linked to self-awareness because they are more character and personality based according to Student (1968). Knoop (1992) claims that, "knowledge of one's qualities, character, abilities and effects is a prerequisite for using power effectively.

James MacGregor Burns (1978), a political scientist, historian and social philosopher, addresses self-awareness through the larger construct called self-actualization in his book on leadership. Burns agrees with the humanistic psychologist that self-actualization includes the ability to self-assess in a state of reflexive self-awareness. Burns suggests that self-actualizers have a distinct capacity to learn from others and the environment. "Self-actualization ultimately means the ability to lead by being led. It is this kind of self-actualization that enables leaders to comprehend the needs of followers, to enter into their perspectives, and to act on popular needs such as those for material help and for security and esteem."

For the purpose of this study, the attribute of self-awareness is also studied as part of a larger theoretical construct called self-actualization (Maslow, 1968, 1970, 1971). Maslow's concept of self-actualization as a human need further enriches the view of a more self-aware, more highly developed individual. "Maslow has developed the idea of the self-actualizing person - a person who is more fully functioning and lives a more enriched life than does the average person" (Shostrom, 1964, p. 207). Maslow describes self-actualizers as highly creative individuals who have the ability to transcend culture and practice universal values (Ayers, 1994).

Maslow's basic assumption is that people strive to be exceptional rather than normal. The extent to which the striving is satisfied dictates what is considered to be self-actualized. Maslow (1970) describes the self-actualized as having a genuine desire to help the human race. People behave with less self-consciousness, accept themselves, have closer interpersonal relationships, show

less ego involvement and act in a kinder manner than non self-actualizing people. Maslow says self-actualizers are individuals who tend to exercise democratic values in all relationships. Self-actualizers behave naturally and simply with a lack artificiality or straining effect. These individuals tend to value solitude and privacy more than the average person.

Everett Shostrom (1963, 1964) developed the Personal Orientation Inventory (POI) as a way to operationalize Maslow's concept of self-actualization. Shostrom perceived a need for a measure that would provide therapists with an estimate of a client's positive mental health. Items from the POI are scored on two primary scales, Inner-Directed Support and Time Competence, are used to measure two major areas: (1) personal and interpersonal development, and (2) time and support orientation. In order to provide a more in-depth conceptual framework for understanding these two terms, the following detailed descriptions are provided in the *POI Manual* (Shostrom, 1963, pp. 13-18):

Time Competency (Tc): The Tc self-actualizing (S-a) person is primarily time competent and, thus, appears to live more fully in the here-and-now. This person is able to tie the past and the future to the present in meaningful continuity and appears to be less burdened by guilt, regrets, and resentments from the past than is the non-self-actualizing person. Aspirations are tied meaningfully to present working goals. The self-actualizing individual's past and future orientations are depicted as reflecting positive mental health to the extent that the past is used for reflective thought and the future is tied to present goals.

Non-self-actualizing persons do not discriminate well between past or future. This person may be excessively concerned

with either the past or future. A past-oriented person may be characterized as guilty, regretful, remorseful, blaming and resentful. This is the person haunted by undigested memories. The future-oriented person lives with idealized goals, plans, expectations, predictions and fears. This person obsesses over the future.

There are also people who are seen as only present oriented. A present oriented person is an individual who does not use his or her past to contribute to the present in a meaningful way and has no future goals tied to present activity. This type of person is often viewed as an unreflective busy person who actively avoids facing himself.

Inner-directed (I): The (I) person goes through life apparently independent, but still obeying the internal piloting system which is influenced by parents and other authority figures. The source of direction for the individual is inner in the sense that internal motivations are the guiding force rather than external influences. The other-directed person appears to have developed a system of influence and support far wider than parents. The primary control feeling tends to be fear or anxiety of fluctuating voices such as school authorities and peers. There is a danger that the other-directed person will be oversensitive to other's opinions in matters of external conformity. Manipulation in the form of pleasing others and insuring constant acceptance becomes the primary method of relating. The feeling of fear can be transformed into an obsessive, insatiable need for affection or reassurance of being loved.

Method

The subjects for this study consisted of outdoor leaders ($N=33$) who served as challenge course instructors for a major university in the Midwest. All challenge

course instructors worked as part-time employees and were certified challenge course instructors by the employing university. The sample group consisted of 17 females and 16 males with ages ranging from 20 to 50 and an average age of 29. Work experience ranged from 2 months to 144 months, with an average work experience of 28 months. Educational levels ranged from current college undergraduates to individuals who had completed masters degrees. These instructors typically facilitated one-day challenge course experiences for a variety of groups ranging in size from 10 to 50 people. Examples of group types included church groups, youth organizations, university student

and faculty groups, therapy groups, corporate groups, school groups, military groups, drug prevention programs, family gatherings and summer camps.

The challenge course instructors (CCIs) led groups in an outdoor setting, through a progression of games and other activities to foster team work, communication, leadership development, self-confidence, and other group goals. All subjects in this study were required to successfully complete a four-day, in-house certification workshop before being employed. The sample instructor pool for this study operated as a peer group working in instructor teams ranging from 2 to 5 individuals. The course administrator randomly assigned, one month in advance, a leader of the day (LOD) among the scheduled instructor team for any given day. All certified instructors were afforded the chance to serve as LOD and assumed the responsibilities as outlined by the course administrator. The instructor team arrived in advance of groups to plan the day and remained afterwards to evaluate the experience among themselves.

Instrumentation

All 33 subjects completed the instruments described below for analysis. The Personal Orientation Inventory (POI) was utilized to describe an outdoor leader's level of self-awareness, and the Rahim Leader Power Inventory (RLPI) was used to obtain perceptions of co-leader influence. The following section provides a description for each instrument and methods of scoring.

The POI is a self-administered questionnaire designed for respondents with mental ages of 14 and above. It consists of 150 two-choice comparative-value judgment items. Examinees are asked to select the one statement of each pair that is most true of themselves. A profile of measures results from the POI which reflects the theoretical concepts and characteristics of a self-actualizing person as proposed by Maslow (1970, 1971). Testing time averages approximately 30 minutes. Individual responses to items are grouped into the two major scales, Time Competency (Tc) and Inner-directedness (I), and compared to normative samples resulting in a standard score. Raw scores from the POI are converted into standard scores utilizing adult norms. The mean standard score for the scale was 50, with a standard deviation of 10.

Discriminate validity for the POI was demonstrated by Shostrom (1964) when two groups, composed of self-actualizing and non-self-actualizing people, were tested. Concurrent validity has been demonstrated by Shostrom and Knapp (1966), Hathaway and McKinley, (1951) and Fox, Knapp, and Michael (1968). Test-retest methods established reliability coefficients of .91 and .93 for the POI (Shostrom, 1964). Reliability coefficients for the major scales of Time Competence at .71 and Inner-direction at .77 are reported in the *POI Manual*. Shostrom (1973) stated that the POI was not prone to distortion and fakeability as

reported in a number of studies (Braun & La Faro, 1969; Fisher & Silverstein, 1969a, 1969b; Foulds & Warehime, 1971).

A second instrument, the RLPI, was used in this study as a way to assess co-leaders' perceptions of expert and referent power among the challenge course instructors. Rahim (1988) created the RLPI based on French and Raven's (1959) power bases, which look at a subordinate's perceptions of a supervisor's power bases. During the development of the RLPI, Rahim (1988) conducted successive administrations to a subject pool of 198, 85, 84 groups of college students respectively and 108, 64, 600 groups of organizational members respectively. A 35-item questionnaire cast on a 5-point Likert Scale containing 7 items per power base resulted from the above procedures. Rahim utilized the Marlowe-Crowne social desirability scale (SDS) (Crowne & Marlowe, 1960) to check the extent to which subjects responded to RLPI items in a socially desirable manner. Pearson's correlations between the SDS and the RLPI subscales showed no significant correlations, which provides some evidence that the power subscales are free from social desirability response bias.

Rahim (1988) tested his instrument by conducting two more studies using 476 executives and 297 students with work experience. The construct validity was partly tested through factor analyses. Criterion-related validity of the RLPI was tested using multiple regression analysis against the measure of compliance with supervisor's directives and wishes. The results show that the legitimate, expert and referent power bases positively influenced compliance (Rahim, 1988). The retest and internal consistency reliability coefficients for the RLPI subscales were satisfactory. No significant correlations

were found between social desirability response set and power subscales in the collegiate sample.

For the purpose of this study, questions were reworded slightly to fit the challenge course co-worker context (Wagstaff, 1997). The test consists of 12 items split so that 6 questions assessed both the referent and expert power indices. Only expert and referent subscales were measured; therefore, legitimate, coercive and reward power subscales were not assessed. The RLPI assessments are based on a 5 point Likert-scale with 5 representing a higher score or stronger power base and 1 representing a lower score or weaker power base.

Subjects completed an RLPI assessment of each instructor with whom they co-led a group. Since not all subjects had co-instructed with one another, some questionnaires were left blank. The range of responses received per individual ranged from 12 to 29 responses. In other words, some instructors co-led with only 12 other people during their employment while others co-led with 29 other instructors at least once. Each subject was rated by 12 to 29 raters, (for example, 12 raters would produce 12 referent and 12 expert power scores). For each subject, a numerical rating of expert and referent power was calculated as follows. First, individual rater averages per instrument were calculated for each subject. Next, all rater averages were combined and averaged to calculate a mean of the means. Based on the scoring method developed by the researcher of this study, the mean of the means score provided the overall power scores for both the expert and referent power scales per subject.

Results

The means and standard deviations for power scores and POI scale scores for

the entire sample of outdoor leaders is summarized in Table 1. Table 2 summarizes the means and standard deviations of POI and power scores broken down into subgroups by age, work experience, educational level and gender. Pearson r 's were computed for analysis of correspondence between perceptions of expert and referent power and POI scale scores. Perceptions of expert and referent power and both POI scale scores were found to have low to moderate associations. For expert power the coefficients calculated were .171 for Time Competency and .357 for Inner-directedness; for referent power co-

efficients for Time Competency were .156 and .198 for Inner-directedness. Shavelson (1988) states that correlation coefficients of .30 or less demonstrate a low magnitude or weak association between variables. A coefficient between .30 and .60 is considered to demonstrate a moderate association. Based on the findings, expert power demonstrates a stronger relationship of association with self-actualizing values than does referent power.

Table 1

Table of Means for Power Scores and POI Scale Scores

N=33	Mean	SD	Range
Power Scores			
Expert	3.8	.43	3.1-4.6
Referent	4.2	.28	3.5-4.6
POI Scale Scores			
Time Competence (Tc)	44.1	10.6	25-58
Inner Directed (I)	49.9	7.2	36-62

Age

A one-way analysis of variance (ANOVA) was conducted to analyze the relationship between chronological age and Time Competence and then Inner-directedness. The participants were divided into three subgroups: ages 21 to 23, ($n=8$); ages 24 to 30, ($n=13$); and ages 31 to 50, ($n=12$). No significant relationship was found when comparing Time Competence with an outdoor leader's age. A significant relationship was discovered between Inner-directedness and an outdoor leader's age, $F(2,30) = 7.52, p \leq .01$.

A post-hoc analysis determined that a significant difference with respect to Inner-directedness occurred between the youngest group ($M=43.88$) and the oldest group ($M=54.50$), $F(1,30) = 14.90, p$

$\leq .001$. A significant difference in Inner-directedness was also discovered between the middle group ($M=49.47$) and the older group, $F(1,30) = 4.36, p \leq .05$, and the younger group, $F(1,30) = 4.25, p \leq .05$.

A one-way ANOVA between chronological age and expert power was first conducted, followed by a comparison with referent power. No significant relationship was found between co-leaders' perceptions of referent power and age. A significant relationship resulted when comparing perceptions of expert power with age, $F(2,30) = 5.50, p \leq .01$.

A post-hoc analysis determined that a significant difference in perceived expert power occurred between the youngest group ($M=3.47$) and the oldest group ($M=4.03$), $F(1,30) = 10.62, p \leq .01$. A

significant difference was also found between the middle group ($M=3.89$) and younger group, $F(1,30) = 6.10, p \leq .05$. No significant differences in perceptions of expert power were found between the middle and older group.

Work Experience

The sample was divided into three subgroups: 2 to 12 months of work experience, ($n=14$); 13 to 24 months of work experience, ($n=10$); and more than 24 months of work experience, ($n=9$). Work

experience was defined as the time period after completing the four-day instructor certification course. A one-way ANOVA showed no difference when comparing Time Competence with work experience. A significant relationship resulted when comparing Inner-directedness with work experience, $F(2,30) = 3.66, p \leq .05$. A post-hoc analysis showed a significant difference in Inner-directedness only between the second group (13 to 24 months of work experience, $M=45.80$) and the third group (>24 months of work experience, $M=54.00$), $F(1,30) = 7.29, p \leq .05$.

Table 2

Table of Means for Sample Subgroups

Sub-groups	POI Tc Scale		POI I Scale		Expert Power		Referent Power	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age								
21-23 ($n=8$)	37.13	8.89	43.88	4.67	3.47	.23	4.10	.23
24-30 ($n=13$)	44.46	10.74	49.47	7.02	3.89	.34	4.26	.21
31-50 ($n=12$)	48.50	9.78	54.50	5.62	4.03	.48	4.25	.36
Work Experience (Months)								
2-12 ($n=14$)	44.14	11.23	50.29	7.43	3.53	.32	4.20	.33
13-24 ($n=10$)	42.90	9.11	45.80	6.10	3.82	.26	4.23	.25
>24 ($n=9$)	45.56	12.21	54.00	5.81	4.33	.21	4.24	.22
Educational Level								
Undergraduates ($n=12$)	41.75	10.96	48.00	6.80	3.65	.36	4.17	.23
Baccalaureates ($n=10$)	46.00	10.86	48.00	7.67	3.77	.36	4.22	.26
Grad.Student/ Masters ($n=11$)	45.09	10.57	53.88	5.93	4.09	.46	4.27	.34
Gender								
Male ($n=16$)	43.94	9.97	49.75	6.82	3.91	.44	4.19	.24
Female ($n=17$)	44.35	11.66	50.12	7.66	3.76	.41	4.26	.31

No significant relationship was found between referent power and an outdoor leader's amount of work experience. A significant relationship resulted when comparing expert power with the amount of work experience accumulated by an outdoor leader, $F(2,30) = 23.12, p \leq .001$. The resulting post-hoc analysis between the groups with 2 to 12 months of work experience ($M=3.53$) and 13 to 24 months of work experience ($M=3.82$) showed a significant difference in perceptions of expert power, $F(1,30) = 46.22, p \leq .001$. Groups with 2 to 12 and more than 24 months ($M=4.33$) also resulted in a significant difference, $F(1,30) = 46.22, p \leq .001$. A final post-hoc analysis between the groups with 13 to 24 and more than 24 months of work experience also resulted in a significant difference, $F(1,30) = 15.87, p \leq .001$.

Educational Level

The sample was divided into three subgroups: undergraduates ($n=12$); completed bachelors degree ($n=10$); and graduate students or masters degree holders ($n=11$). A one-way ANOVA showed no significant relationship between Time Competence and the educational level of an outdoor leader. Also, no significant relationship was found when comparing Inner-directedness with an outdoor leader's educational level.

No significant relationship was found between co-leaders' perceptions of referent power and an outdoor leader's educational level. A significant relationship resulted when comparing perceptions of expert power with educational level, $F(2,30) = 3.88, p \leq .05$. The post-hoc analysis of all three groups resulted in a significant difference in co-leaders' perceptions of expert power only between the first group of current undergraduate students ($M=3.65$) and the third group consisting of

graduate students and master degree holders ($M=4.09$), $F(1,30) = 7.40, p \leq .05$. No significant differences were found between any other groups.

Gender

The sample was divided into two subgroups: males ($n=16$) and females ($n=17$). A one-way ANOVA showed no significant relationship was found when comparing male and female Time Competency. Also, no significant relationship resulted when comparing male and female Inner-directedness.

No significant relationship was found between perceptions of referent power and gender (males, $M=4.19$ and females, $M=4.26$). Also, no significant relationship resulted when comparing expert power with gender (males, $M=3.91$ and females, $M=3.76$).

Summary

Perceptions of expert power are directly correlated to the attribute of Inner-directedness. Outdoor leaders who are perceived as having a strong expert power base show a greater reactivity orientation towards the self. They are more spontaneous to be themselves and are responsive to their own personal needs and feelings. More research should be conducted to further observe the relationship between expert power and self-actualizing values associated with Inner-directedness. How does the perception of possessing skills and knowledge as an expert relate to being more Inner-directed as opposed to other-directed? Answering this question would be beneficial in promoting the development of leader expertise beyond simple technical skill acquisition.

Time Competency (Tc) and Inner-directedness (I) were both expected to

show a relationship to age as found in prior studies (Knapp, 1990). It showed no relationship while differences in I scale scores were found between all three age groups. A significant relationship was found between perceptions of expert power and age. The youngest group of leaders was perceived by co-leaders as having weaker expert power bases. The middle and older aged groups were both perceived as having stronger expert power bases. As an outdoor leader's age increased, there was also an increase in the self-actualizing attribute of Inner-directedness.

The significant relationship between age and expert power may support the notion that perceptions of expertise do not transcend demographic characteristics such as age. This finding further links the concepts of Inner-directedness and expert power through the maturation process of age. The possibility also exists that perceptions of expert power are more prone to cultural biases perpetuated by the human socialization process. A potential research question to address this might be, "What specific factors influence varying perceptions of expert power within a specific cultural context?" When comparing power bases with age, no relationship was found between age and referent power. Therefore, one assumption might be that referent power is not affected by certain personality attributes such as age. Possibly, more discrete, psychological structures such as self-concept or self-efficacy affect a person's referent power base.

A significant relationship was found when comparing individuals' Inner-directedness with their amount of work experience as a challenge course instructor. Outdoor leaders who had worked 13 to 24 months in this study appeared to be less Inner-directed than outdoor leaders who had worked for more than two years. A significant relationship

resulted when comparing perceived expert power with work experience. As outdoor leaders gain work experience, co-leaders' perceptions of expert power also increase. Based on the findings of this study, the possibility exists that the quantity of work experience directly influences the co-leader relationship due to the increase in perceptions of expert power.

The results reinforce a common perception that an individual's degree of expertise increases as work experience increases. Further questions are raised by the new evidence that some type of relationship may exist between Inner-directedness and perceptions of expert power. For example, "Why are self-directed individuals perceived as experts?" The answer to this question may help develop a deeper understanding of perceptions of expert power.

A significant finding resulted when comparing perceptions of expert power with educational level. Undergraduate outdoor leaders were perceived to have a weaker expert power base than outdoor leaders who were graduate students or those who held masters degrees. Education is another potential attribute which could be seen among outdoor leaders as a determining factor influencing co-leaders' perceptions of expert power. The cohorts for this study actively participated in the institution of higher education and therefore may have associated their value of higher education with expertise. More studies should be conducted to assess the relationship between perceptions of expert power and educational level. Also, research needs to be conducted to determine how expert power actually affects co-leader relationships compared to other types of power.

Power and its relationship to gender in this study also deserves attention. The fact that there was no significant differ-

ence between men and women and perceptions of power has fascinating implications. Power and gender are contemporary issues that permeate all professions, including adventure education. This study provided some evidence that perceptions of power were equal among women and men in this study. Anecdotal comments made to the researcher by the subjects provided some insight. Several subjects shared that gender equity is modeled and taught within this particular organizational structure. The administrator's expectations applied to all employees equally, and infractions of disrespect for the opposite sex were confronted by the administration. This organizational norm was instilled during initial training and reinforced throughout employment. A research question to pursue based on this implication might be, "Does the management of an organization have direct influence over the perceptions of power between men and women co-workers?"

Implications

Assessing the attribute of self-awareness within the context of self-actualization could prove to be beneficial in the training and development of outdoor leaders. Developing an individual's leadership skills presents a challenging task that holds no clear methodology as opposed to technical skill development. Self-awareness may be the psychological construct that allows leaders to access the interpersonal skills necessary to develop competent leadership skills. If self-awareness is defined within the context of self-actualization, trainers of outdoor leaders have a reference to formulate specific goals for leadership skill improvement.

The construct of power also deserves more attention as an important variable when studying outdoor leader-

ship. French and Raven's (1959) view of power operationalized by the Rahim Leader Power Inventory (RLPI) did produce thought-provoking results even though the small sample was a limitation in this study. The revised instrument used in this study could be used (with Dr. Rahim's permission) to assess the power indices within a large staff of outdoor leaders should power issues be a suspected problem. Using the tool could be a method to raise awareness and stimulate discussion. More research needs to be conducted to see if outdoor leaders perceive peers as experts based on age, work experience, and educational level. This knowledge could also be helpful in raising the awareness that hierarchies do exist and may help explain staffing patterns, organizational culture, and staff relationships.

The findings of this study have ramifications for Winter's (1976) model of co-leader roles and concerns. Evidence was found to support the notion that co-leaders perceived each other as experts based on age, level of education, and work experience. More research needs to be conducted to determine the exact effect of a strong expert power base within the co-leader relationship. For example two questions to ask might be: (1) are the working relationships more satisfying when there are perceptions of a strong co-leader expert power base or (2) do higher levels of leader expert power expedite functional group development? As recommended in this study, clarifying the definition and characteristics of expert power would further our understanding of co-leader relationships and group development.

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**"A SENSE OF COMPETENCE:"
RE-CONCEPTUALIZING ISSUES OF COMPETENCE FOR WOMEN IN OUTDOOR EDUCATION**

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Competence development in outdoor education is a complex process that is shaped by gender-role socialization, learning environments, and by individual differences. Outdoor educators need to further their understanding of this process so they can fully empower themselves and their students. Outdoor programs need to be designed to support the development of both competence in outdoor skills and a sense of competence in these skills so program participants will be able to fully participate in outdoor activities. This abstract provides an introduction to the issue of competence development and further discussion of this topic is available in Loeffler (1997).

It is critical to draw a distinction between actual competence and sense of competence (Mulqueen, 1995). A woman's sense of competence is the perception she holds of herself performing within her environment (White, 1976). Women tend to view their personal competence through a filter composed of society's perceptions and responses which, in turn, influence their self-perceptions of their competence (Sternberg & Kolligan, 1990). Consequently, women's sense of competence and actual competence may not be congruent and are often conflicting, resulting in a particular woman perceiving that she is less competent than she actually is in reality (Mulqueen, 1995).

According to Mulqueen (1995), sense of competence is a useful concept for

women because it provides a concrete foundation on which to build or re-build women's self-esteem by helping women find ways to feel more competent. She recognizes that it may not be that women's "actual level of competence needs to change; rather the missing link may be between what they do and how they assess what they do" (p. 9).

There are many ways that outdoor programs can support women in developing a sense of competence. Providing single-gender learning environments can assist in the development of both competence and a sense of competence because it removes the socialization that women should be less competent than men. In a mixed-gender environment, some women may not demonstrate their competence for fear it would show-up the men in the group. Mulqueen (1995) states that "women are socialized not to outperform men and thus inhibit themselves rather than emasculating a man is a direct by-product of our current association of competence with masculinity" (p. 4).

Along with providing single-gender learning environments there are some other pedagogical strategies that can assist in the development of competence. Honoring women's differences allows them to express their competence more completely because it allows them to define their femininity and gender-role in their own terms (Mulqueen, 1995). Supporting women to give up perfectionism and supporting them in both suc-

cess and failure are critical to the development of a sense of competence. Using cooperative learning methods and environments rather than competitive ones tends to assist women in developing a sense of competence (Mulqueen, 1995; Streitmatter, 1994).

In assisting women to feel competent in outdoor activities, we must assist them in bridging the missing link by providing single-gender learning environments, unbiased mixed gender learning environments, and by providing supportive learning experiences that allow (or convince) women to know their competence.

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VALIDATING PREDICTORS TO DETERMINE OPTIMAL ADVENTURE IN WHITEWATER KAYAKING

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Understanding the role of "flow" experiences has been an emerging topic of research in adventure recreation/education. A number of recent studies have evaluated these optimal experiences in terms of the effects of more structured educational environments rather than the effects of unstructured, on-site conditions of adventure. Previous studies have modified Csikszentmihalyi's theoretical model of flow to assess adventure experiences (e.g., peak adventure) in outdoor education settings (Martin and Priest, 1986; Priest and Bunting, 1993). However, despite these modifications of the theoretical model, there has been little effort to evaluate the validity of Csikszentmihalyi's (1975, 1990) conceptual framework relative to the experience of adventure. The negligible number of empirical investigations in adventure settings leaves questions unanswered regarding the validity and effectiveness of predictors (e.g. challenge-skill, risk-competence) of optimal adventure.

As a result, this study attempts to validate predictors of optimal adventure within an on-site whitewater kayaking setting using a modification of the Experience Sampling Method (ESM). Based on the flow theory and Martin and Priest's (1986) Adventure Experience Paradigm, it was expected that measures of challenge-skill and risk-competence would be correlated and predict indicators of an optimal or peak adventure experience. Additionally, it was expected that differences would be found in the levels of perceived challenge and risk according to the difficulty of river stages.

Surveys were administered on-site in the Cheat River Canyon in West Virginia to 52 whitewater kayakers at eight stages based on varying levels of river difficulty. Data was analyzed at the level of experience ($n = 409$) rather than the subject. A-priori hypothesis testing, based on key statistical analyses (correlations, linear regression, and repeated ANOVA), supported the convergent and ecological validity of predictors of optimal adventure. However, the explanatory power of these predictors, while higher than that reported in studies of daily experience, indicates a need for further development of models attempting to assess the concept of optimal adventure.

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PITFALLS TO AVOID IN ADVENTURE EDUCATION OUTCOME RESEARCH

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Adventure education programs claim to teach people about themselves, develop awareness, reduce recidivism, enhance self-esteem, develop leaders and produce a hearty variety of other results beneficial to the individual participants and to mankind. The question that naturally follows, "Does research support these claims?" Actually, there is an abundance of research that does support these and many other effects of adventure education programs. In a recent meta-analysis by Hattie, Marsh, Neil and Richards (1997) 96 studies were found which evaluated the outcomes of adventure programs. Cason and Gillis (1994) located 79 studies that looked specifically at adolescent populations. However, 36 (45%) were eliminated from their meta-analysis because they (a) lacked statistical information, (b) were not empirically based or, (c) did not involve adolescent populations (p. 42). So, plenty of research exists, but one question persists: How good is it?

Adventure education research began in the 1950s and easily progressed through the 1970s primarily focused on descriptive information and surveys to assess effects on adventure education participants. The focus was on enhanced self-esteem, locus-of-control, and self-concept (Ewert, 1987). In the 1970s many studies began to attract attention due to their lack of scientific method, and this trend carried into the 1980s (Ewert, 1987). Warner (1990) concluded, "too much time and effort has been devoted to conducting poorly controlled outcome studies...Hit-and-run outcome studies do not develop a

strong research and evaluation framework" (p. 310).

As this review of adventure education outcome research evolved, several themes emerged: (a) The variety of research goals, treatments, outcomes, durations, and instruments make comparisons difficult, (b) many studies use convenience samples and do not randomly assign participants, (c) many studies do not use a control group or a comparison group, (d) there are often problems or questions regarding the use and reporting of statistical findings.

Despite common limitations of outcome studies, some solid research does exist. There has been much consensus that adventure education needs more theory building and theory testing, yet the methodological problems associated with much of the empirical and quantitative research are making this a daunting task. Future research endeavors should (a) make comparisons that make sense, (b) use random assignment to experimental and control/comparison groups, (c) use and report appropriate statistical procedures, (d) take care to assess validity of research instruments for populations under study, (e) be willing to openly discuss project biases and limitations.

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**EFFICACY OF A TR SELF-ESTEEM PROGRAM
FOR ADOLESCENTS WITH EMOTIONAL DISTURBANCES
IN A TREATMENT SETTING**

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Since the early 1970's studies have reported that a high percentage of adolescents with emotional disturbances also demonstrate low levels of self-esteem (Fitts, 1972; Long, Ziller, & Banks, 1970; Wylie, 1961). Low self-esteem among adolescents with mental health diagnoses is now so widely accepted that it is difficult to find treatment program advertisements that do not include a statement about how their program will improve the child's self-esteem. Although this may be an effective marketing strategy, trends in health care reductions are demanding outcome justifications for treatment programming including those that address self-esteem. Studies indicated inconsistencies in the effectiveness of education-based self-esteem enhancement programs. Of four similar studies in the same time period, two indicated a significant increase in levels of self-esteem (Fisher, 1991; Duovette, 1990), while two others reported no significant increase (Gares, 1991; Waggoner-Weir, 1991). Research in residential treatment programs demonstrate a general increase in levels of self-esteem, but do not link that effectiveness to any specific modality or area of treatment programming (Friedman, Rogers, & Gettys, 1975). Research on experiential learning based programs, including camping and outdoor adventure programming, have consistently demonstrated increases in levels of self-esteem among adolescents (Kreiger, 1973; McDonald & Howe, 1989; Nearingburg,

1982; Weider, 1976). A recent meta-analysis (Hattie, Marsh, Neill, & Richards, 1997), drawn from 96 studies on adventure programming, indicated short and long-term effectiveness in areas regarding the self. These findings suggest that a self-esteem enhancement program based on experiential learning concepts such as those used in therapeutic recreation programming, should be effective with clinically presenting adolescents.

The purpose of this study was to determine the effectiveness of a modularized therapeutic recreation self-esteem program (that included outdoor adventure based components) provided for adolescents in a residential treatment center. Data were also collected on demographic variables including age, gender, and ethnicity. Subjects consisted of 112 adolescent patients ranging from ages 12 to 17, with an average length of stay of nine months to one year. The experimental group consisted of 54 patients and the control group consisted of 58, all of which were identified as having low self-esteem. The experimental group received therapeutic recreation self-esteem programming twice weekly for 8 weeks, while the control group did not. Pre, during, and post measurements of self-esteem were recorded for both the experimental and control groups. The results, using a repeated measures analysis of variance, were statistically significant in three variables. Findings supported the literature and

indicated an increase in levels of self-esteem as a result of being in residential treatment. Results also indicated a significantly greater increase in levels of self-esteem for those in the therapeutic recreation self-esteem program. Although there appeared to be no relationship in other demographic variables, there were significant findings related to ethnicity. Findings from this study have assisted with service justification in an era of healthcare reduction, and have created direction for further study. Continued research is recommended with greater experimental control, as well as with the use of more objective self-esteem measures. Many intriguing questions have surfaced in regards to ethnicity and levels of self-esteem which will need exploration. Further study is also recommended with and without the adventure based components.

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LEARNING OUTDOOR RECREATION SKILLS IN A SAFE PLACE: LESSONS FROM A SINGLE-SEX PROGRAM

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Introduction and Background

While women have always recreated and participated in outdoor recreation (Bialeschki, 1992), the out of doors and the activities done in it traditionally have been considered a male domain. Women have not participated in outdoor recreation activities as frequently as men for a variety of reasons including social stereotypes, family responsibilities, lack of skill, and a perception of a lack of entitlement to leisure (Bialeschki, 1992; Henderson, 1990; Jordan, 1989). The dominant stereotype is that "masculine activities" are enjoyed in the out of doors, and because of this, outdoor recreation activities such as camping, hunting, trapping, and fishing have long been considered taboo for women (Bammel & Bammel, 1996; Bialeschki, 1992; Henderson, 1990; Jordan, 1989).

The perception that outdoor recreation activities are taboo for women, however, is beginning to change. Henderson, Bialeschki, Freysinger, and Shaw (1996) reported that more women than ever before are participating in outdoor recreation, and that this will continue to rise. Women's experiences in the out of doors are little understood, yet we know that involvement in outdoor recreation is desired by many women. As they prepare to become more involved in outdoor recreation women are searching for and participating in outdoor recreation skill workshops across the country. Many of these

workshops are designed for, instructed by, and restricted to female participants.

While there is an increase in outdoor recreation participation by women, research about women and outdoor recreation is lacking. Studies in this area have been sporadic and limited over the past fifteen years (Bialeschki, 1992; Henderson & Bialeschki, 1986; Henderson, 1992; Jordan, 1989; Yerkes & Miranda, 1985). The research about people's involvement in outdoor recreation that does exist has focused primarily on males because they are the majority of outdoor recreation participants. Thus, a gap exists in our understanding of the experiences of females in the outdoors, particularly in outdoor recreation. It is important to understand women's experiences in the outdoors from their perspective. Leisure providers can better serve this growing population by learning more about what women want in outdoor recreation, how they feel about doing outdoor recreation activities, and the constraints they face in their outdoor recreation efforts.

The primary intent of this study was to ascertain the reasons women participate in single-sex outdoor recreation workshops to learn outdoor recreation skills. A secondary issue was to identify reasons for participation in outdoor recreation activities.

Theoretical Frameworks

Two perspectives were utilized as underlying frameworks for this research: feminist theory and gender theory. An advantage of utilizing a feminist framework for this research study is highlighted by Sky (1994). She suggests that through such a framework women are not viewed merely as subjects, but as sources of knowledge. In addition, theories emerge from women's perspectives. Furthering the conceptualization of feminist theory in the study of leisure, Henderson and Bialeschki (1991) noted that there are three goals of feminist philosophy: 1) to make women's and girls' lives more visible; 2) to redefine existing social systems; and, 3) to enable all women to have equity, dignity, and choice through the power to control their lives both in and out of the home. They also indicated that feminist methodologies rely on listening to women speak in their own voices, and on being sensitive to differences among and between women. These elements are important in understanding and utilizing the research reported here.

Feminist theory helps to establish a basis from which to conduct research and gender theory provides a cogent explanation for understanding one aspect of the socialization process on peoples' lives. Henderson (1996) indicated that research where gender is not viewed as a variable, but a central theoretical construct is necessary to fully examine the influences of gender on leisure (and vice versa). Therefore, the second underlying construct for this research study is that of gender theory.

It is clear that our understanding of experiences in leisure is influenced by gender role expectations; in essence, leisure is gendered (Fox, 1994; Davidson, 1996; Freysinger, 1990; Henderson & Bialeschki, 1990; Jackson & Henderson, 1995; Kane,

1990; Shaw, 1994). Our understanding and perception of leisure is impacted by the lifelong socialization process whereby we learn the gender expectations that apply to us. We know from previous research that the differences in leisure experiences between women and men "are more contextual than biological" (Henderson, 1996, p. 163). The differences are due to social dictates and mores, the roles one fulfills, and the type of lifestyle one promotes rather than one's sex. Leisure and recreation opportunities and experiences deemed "appropriate" (feminine) for girls and women include such activities as aerobics and gymnastics; males are to engage in "masculine" activities such as football and hunting (Jordan, 1989; Kane, 1990; Shaw, 1994). This gender-role conformity constrains leisure choices for both women and men (Kane, 1990).

Thus, both a feminist framework and gender theory support this research. By better understanding why women choose single-sex environments in which to learn outdoor recreation skills, women's lives will be made more visible and existing social structures called into question and perhaps, reexamined. In addition, the influence of socially proscribed gender roles on women will be better understood aiding in the elimination of restrictions on leisure opportunities and choices for women.

Procedures

Data were collected through self-report written questionnaires developed for use in this investigation. Both closed-ended and open-ended items were selected to reflect the research questions for the study, and were developed out of the literature review, previous research conducted with this program, and the stated desires of representatives of the state Department of Natural Resources.

The surveys were inserted into participant registration packets at a weekend-long outdoor recreation program designed and held for women in the fall of 1996. The closed ended items elicited quantitative data which were analyzed with descriptive statistics using SPSS for the Macintosh, while the open-ended, qualitative items were analyzed using an open coding system. Only the qualitative data are presented in this paper. Through the qualitative analysis common themes emerged and categories were determined. This was accomplished after reading the data many times and comparing, coding,

and enumerating the responses. A second rater was employed during the coding process; there was a 90% inter-rater agreement on categorization and assignment within category. Data were collected from 100 of 126 individuals for a 79% response rate.

Results

Participants were primarily white, middle class, highly educated, and between the ages of 18 and "over 55." Specific demographic data are presented in Table 1.

Table 1

Demographics

<u>Previous attendance at workshop</u>		<u>Ethnicity</u>	
first time attendee	65%	white	98%
second time attendee	26%	other	2%
third time attendee	5%		
no response	4%	have disability	6%
<u>Age</u>		<u>Education level</u>	
18 to 36 years	26%	completed high school	12%
36 to 55 years	58%	some college/college degree	69%
over 55 years	12%	graduate college	15%
no response	4%	no response	4%
<u>Income level</u>		<u>Occupation</u>	
less than \$25,000/year	11%	business woman	32%
\$25,001 to \$50,000/year	40%	healthcare worker	22%
more than \$50,000/year	39%	teacher	8%
no response	10%	homemaker	8%
		clerical worker	6%
		retired	4%
		self employed	4%
		other (e.g., farmer, student)	12%
		no response	4%
<u>Marital status</u>			
married/partnered	73%		
single	23%		
no response	4%		

Number of children		Ages of children	
no children	22%	under 5 years old	5%
1 - 2 children	50%	5 to 12 years old	19%
3 or more children	24%	13 to 17 years old	12%
no response	4%	over 18 years old	38%
		no response	26%

Table 2

Top Ten Reasons for Attending the All-Women Workshop

	Frequency	Percent
To learn new skills	94	18.2
For the love of the outdoors	82	15.9
To try something new	57	11.0
To practice skills	54	10.5
To build my confidence	46	8.9
To make new friends	34	6.6
To network with others	31	6.0
For vacation	30	5.8
To equalize my knowledge w/partner	29	5.6
To be with friends	17	3.3
Total responses	474	91.8

Prior to asking why they chose a single sex environment in which to learn outdoor recreation skills, workshop attendees were asked why they decided to learn about outdoor recreation. The two most important reasons for participating in the workshop were "to learn new skills" and "for the love of the outdoors." The top ten reasons for participation are presented in Table 2.

Women were very willing to share information about why they chose a single-sex environment in which to learn and enhance their outdoor recreation skills. From the data, four categories of reasons emerged explaining this desire for a single sex environment: 1) the environment was perceived as non-threatening (two sub-categories emerged: no men were present, and participants shared a baseline of novice-level

skills); 2) the reputed quality and safety of the program; 3) to be with other women and the anticipated friendships; and 4) to learn outdoor skills and knowledge. Quotes supporting each of these categories are presented below.

Non-Threatening Environment: No Men Present

Eighty-nine percent of the women who attended the workshop expressed a sense of appreciation at learning in an environment that was non-threatening because there were no men present. It was evident that the women shared a perception that men were judgmental, intimidating, and condescending. Women stated, "There are no men here. I don't have to worry about being judged by them. I enjoy the mostly female instructors."

[25 – 35 year old married marketing representative w/two children]; and "It sounded very interesting and [I] would not be intimidated by males." [under 25 years old single insurance broker]. Two others reported, "No one is "teaching" in a condescending manner. It gives me confidence in myself. It's opened up a whole new world to me." [46 – 55 year old married chiropractor's assistant w/two grown children]; and "You are learning with other women. Sometimes you feel like men talk down to you or don't want you doing "their" sports." [25 – 35 year old single public relations specialist]

Non-Threatening Environment: Shared Skill Levels

The other aspect of the non-threatening environment was that the women felt comfortable being in the company of others who shared common skill levels. By far, the comments indicated that it was important to be free from the embarrassment of being unskilled. The women said, "It was the most "comfortable" way for me to learn (i.e., not feeling like an old dummy because I've had 59 birthdays and still don't know how to fish!)." [59 year old married nurse with two grown children]; "Didn't feel embarrassed [sic] [because] men are around and you're not very good at a skill. [Having] the same skill level of people helped." [25 – 35 year old single research analyst]; and "I felt it would not be an intimidating experience; a way to learn with women of equal ineptitude!" [46 – 55 year old married part-time worker with one grown child]

Reputed Program Quality

The third category of responses was related to the quality of the program. It is clear that women want to learn the correct methods and techniques of various outdoor rec-

reation skills. Comments included, "It had professionals teaching the classes." [36 – 45 year old single businesswoman]; "I came here last year and had a wonderful experience. This is a top notch program that is well organized and has excellent programs and speakers." [36 – 45 year old married healthcare worker with 3 children]; "People's past experiences with the workshop the expertise and level of knowledge and skills of the instructors." [46 – 55 year old divorced clerical worker]; and "To learn the knowledge and expertise from the instructors and to learn the 'proper' and 'legal' procedures of the different activities offered." [25 – 35 year old married executive assistant].

In addition to quality of instruction, women also felt physically safe being a group of all women. As one workshop attendee noted, "It's very comforting to feel and be safe walking in the woods at night or even by the parking lot." [36 – 45 year old married teacher with two children].

To Be With Other Women

In reviewing the data the fourth category of responses as to why women chose a single-sex environment in which to learn outdoor recreation was related to being with other women. The special connections and relationships that develop between women were important to the respondents. They said, "I get to speak to and laugh with and enjoy these strangers—who have suddenly become non-strangers—because of this wonderful interest we are sharing." [36 – 45 year old married machine operator with 4 children]; "[for the] companionship of other women" [25 – 35 year old married RN with no children]; "I thought the company of women would make it special." [46 – 55 year old married teacher with 3 children];

and "[it is] good to be with other women interested in outdoors." [36 - 45 year old married writer with four children].

Discussion

It is clear that women desire single sex outdoor recreation learning opportunities, and that they can benefit from them. As the women mentioned, this is in part because all-women programs offer a safe learning environment. Safety was viewed as psychological (free from intimidation, power-over, and role constraints of co-ed workshops), educational (it is okay to be inept—judgment based on skills is minimized, as is the concomitant embarrassment), physical (there is no fear for one's physical safety or of violence), and emotional (participants can express emotions without fear of sanctions).

In addition to the many elements of safety, women desired a single sex workshop to learn outdoor recreation skills because they felt that being with other women was special, and because they simply wanted to learn proper outdoor recreation skills and techniques. Most of the women in this study had at least one child and worked outside the home. The resulting "double shift" leaves little time for gathering with friends and groups of people who share common interests. A single sex outdoor skills workshop creates a gathering place where women can connect with others who share similar concerns, problems, interests, and life situations. It is a place where female sharing and bonding can occur.

The other issue, the desire to learn proper outdoor recreation skills and techniques, obviously is also important to women. This was identified as the most important reason to participate in the workshop, and also as one of the four reasons for

selecting a single sex learning environment. Learning the proper skills and techniques to fully participate in outdoor recreation enables women to feel increasingly competent and confident in their own outdoor recreation abilities.

The women in this study gained much from their participation in the outdoor recreation workshop and had common reasons for selecting the single sex learning environment. At the same time, it was clear (from anecdotal comments and verbal asides during the workshop) that the participants understood the possible repercussions and social sanctions they would receive because of their attendance. One respondent noted this negative element surrounding participation in a weekend workshop meant for a women only audience. She also indicated how her early perception was changed through her participation. The individual said, "We feared this workshop might be alot [sic] of women wanting to be men or male bashing—we were wrong. Great teaching, great bunch of people attending & teaching & running the show."

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EVALUATING SHORT TERM AND LONG TERM RETENTION OF EXPERIENCES ASSOCIATED WITH AN INTERPRETIVE SCHOOL FIELD TRIP

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Introduction

There are literally thousands of outdoor interpretive centers located throughout the country. Over twenty million elementary and junior high students take field trips to these facilities each year (Ramey, Walberg & Walberg, 1994). A national survey administered to primary and secondary educators found that almost half of the teachers polled take their students on a non-formal outdoor field trip (World Wildlife Fund, 1994).

The outcomes desired by the interpreters leading these field trips tend to represent variables such as visitor knowledge, attitude, and behavior toward the resource site (Knapp, 1994). Orion and Hofstein (1994) report that during the last two decades there has been increasing interest in these non-formal experiences along with a sharp increase in empirical studies evaluating their impact. A significant proportion of this research has supported the notion that an interpretive experience can positively impact the knowledge of the resource site and its related subjects (Koran, Koran & Ellis, 1989; Lisowski & Disinger, 1988; Ramey, Walberg & Walberg, 1994).

The strong evidence that an interpretive experience can promote initial knowledge retention sets up a more difficult question: how long do these students hold on to this information? More precisely, what do

the students remember one month or more after the initial treatment? Are these memories associated with interpreter-derived program objectives or tertiary variables such as social or environmental factors? Can the memories from this experience impact a student's attitude toward the resource site? These are questions that are looked at through this pilot study evaluating short term and long term retention of experiences associated with an interpretive school field trip.

The researchers note that the literature on the relationship of memory and an outdoor interpretive field trip is virtually nonexistent. Therefore, this paper will bring to light models on memorable experiences from the fields of psychology and education. A theory of long term memory developed by Tulving (1972) was used as a basic paradigm of correlation for the subsequent investigation. A pilot study was implemented to look at retention of information from an outdoor field trip one month and 18 months following its implementation. The memories that are recorded from this evaluation are hypothesized to be rooted in what Tulving would define as episodic memory.

Literature Review

Most research conducted on the interpretive field has not focused on memory. The bulk of the research available on interpretive programs has measured changes in environ-

mental knowledge (e.g., Jordan, Hungerford, & Tomera, 1986; Lisowski & Disinger, 1991; Ramsey & Hungerford, 1989), changes in participants' attitudes (e.g., Jaus, 1984; Ryan, 1991), or changes in participant behavior (e.g., Asch & Shore, 1975; Jordan, Hungerford, & Tomera, 1986; Ramsey & Hungerford, 1989). Since research on field trip memory and retention is still in its infancy, memory theories and models from psychology and education were used to guide this project. In addition to field trip related memory literature, information processing, episodic and semantic memory distinctions, and long term retention literature was reviewed.

Memory Research Related to Field Trips

While memory research related to field trips is lacking, there have been several studies that are relevant. Mackenzie and White (1981) completed one such study that compared three groups of eighth and ninth grade students on a variety of dependent measures based on a retention model proposed by Gagne and White (1978). One group, serving as a control, did not participate in any field experience. A second group participated in a passive (observational) field trip, and the final group actively participated in the field trip. Results showed that those participants who were actively involved in the field trip demonstrated a better understanding of the course materials immediately following the field trip and showed significantly less loss of knowledge over a 12 week period than both the comparison (non-interactive field trip) and control (no field trip) groups (Mackenzie & White, 1981).

A study conducted by Jones, Eagles, Fallis, and Hodge (1994) looked at memory in this model (see figure 1), information enters through a sensory register (sensory

ries associated with half and full week field trips to the Boyne Natural Science Center. They collected survey data on what participants remembered one to four years after visiting the interpretive science center and nature preserve. The most remembered things were the ropes course, the food, hiking, friends, dorms, interpreters, caving, night hikes, black flies, and campfires.

In a similar study, Cline (1996) surveyed participants of a weeklong residential camp in Indiana. Her subjects, then seniors in high school, had attended a weeklong program at Bradford Woods Outdoor Education Center when they were in fifth grade. This was a traditional outdoor education experience that included program objectives of nature study, outdoor skills, and environmental education. Cline found that the most remembered things were a Lifesaver's sparkle party, cabin skits, hiking, and food. Few references were made to any educational objectives. Cline also noted that the informal discussion between subjects that took place after the survey was rich with information not documented on the survey instruments. Discussion topics following the questionnaire included memories of hiking the "killer hill", being scared to walk in the woods at night, and being nervous about being away from home. Additionally, she noted that all participants, even those that indicated they did not enjoy the weeklong residential camp, laughed and fondly reminisced with the others during the informal conversations following survey completion.

Introduction to the Information Processing Model

The information processing model proposed by Atkinson and Shiffrin (1968) provides a framework for memory research. memory); it is then either lost or moved to a short term store (working or short term

memory) for processing. The short term store information can either be discarded or passed along to the long term store (long term memory). Unlike the temporary memory stores in the sensory and short term stores, once information enters long term memory, it can only be lost through interference or decay (Atkinson & Shiffrin, 1968).

Subsequently, the concept of metacognition has been applied to this model and serves to oversee the flow of information between memory registers (Benjafield, 1997). Nonformal education research has begun to critically analyze one or more aspects of the information processing model. Studies in both long-term and sensory memory have been conducted to document the impact of school field trip experiences on memory (Falk & Dierking, 1997). In particular, data in nonformal arenas is pointing

to the importance of long term memories. As Falk and Dierking state: "Evidence from a variety of investigations is emerging that shows that much of what an individual comes to discover about what he or she 'learned' in a museum only becomes apparent weeks, months, or even years after the experience" (p. 212).

Sensory Memory

Information enters the information processing model through sensory memory which measures perception. An input from the senses is compared with knowledge from long term stores, and, if this perception is worth recognizing, the sensation may be passed on to working memory for processing. Otherwise the sensation is discarded (Atkinson & Shiffrin, 1968).

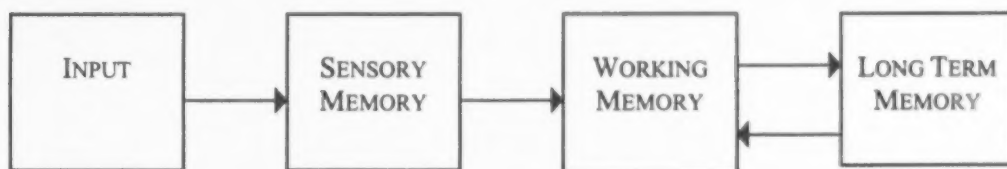


Figure 1. General information processing model based on a model proposed by Atkinson and Shiffrin (1968).

Many of the field trip teaching aids or guidebooks (e.g., Redleaf, 1996) emphasize the necessity of using as many senses as possible during field trips: looking, listening, smelling, touching, and tasting. This allows the information to enter the sensory memory through a number of paths.

Some research supports the idea that information that enters through multiple senses (dual-coded memories) is more easily remembered. Clark and Paivio (1991) found that information that was learned both verbally and non-verbally was better remem-

bered than information coded from only one source.

Working Memory

Working or short term memory has a limited capacity. Miller (1956) found that working memory could usually hold seven plus or minus two chunks of information at one time. As new information enters from the sensory register, the information in working memory must either be rehearsed or moved to long term memory, or it is lost. The process of over learning by repeated rehearsal in working memory stores has

been found to greatly enhance recall (Farr, 1987). Additionally, processing information by thinking about its relevance and interconnections has been shown to enhance recall. Mackenzie and White (1981) found that fieldwork which encourages processing will produce greater linking of episodes with knowledge than field trips lacking processing. This processing and linking enhances knowledge transfer. Students must be actively involved in processing new information, forming connections, and drawing conclusions about their experiences.

Long Term Memory

Long term memory is the final component of the information processing model. While there are several models of long term memory, Tulving's (1972) proposed distinction between episodic and semantic memories provides the most appropriate framework for event specific memory research. According to Tulving (1972, 1983) propositional knowledge is broken down into episodic and semantic components. Episodic memory is "involved in the recording and subsequent retrieval of memories of personal happenings and doings," while semantic memory is "knowledge of the world that is independent of a person's identity and past" (Tulving, 1983, p. 9).

While episodic and semantic distinctions are practical for research and discussion, there is much debate as to whether two separate mental systems exist in the head. However, from an ecological viewpoint this is unimportant. "From an ecological point of view, the answer is straightforward, episodes and impersonal facts (for example) are separate classes of rememberable things. They are not mental categories but environmental ones" (Neisser, 1985, p. 274).

There are several key differences between episodic and semantic memories (Tulving, 1983): (a) episodic memories are located temporally while semantic memories are located conceptually; (b) episodic memories involve emotion while semantic memories are separate from emotion; (c) episodic memories have less general utility; (d) episodic memories are unrelated to intelligence; (e) episodic memories are less important to education; and (f) episodic memories are generally more readily forgotten.

There is support for transfer of knowledge from episodic to semantic memory in Tulving's model. After a stimulus sets a memory cue into motion, this cue searches pathways for relevant memory traces or engrams. As the memory trace is accessed by the cue, something happens that Tulving (1983) termed "synergistic ecphory." Ecphory is "the process by which retrieval information is brought into interaction with stored information" (p. 178). This ecphoric information determines the rememberer's recollective experience of the past episode, as well as its potential for convertibility into other forms of knowledge. Memories are retrieved by associations that are formed both at the time of the memory and are subsequently constructed and destroyed as the mind creates different associations which enable it to recall memories based on sensory cues (Tulving, 1983). So, memories that were originally coded as episodic memories, tied to a specific event in time, may be recalled, reprocessed, and recoded as semantic memories through ecphory.

Some proponents of ecological memory research believe that "all generalized knowledge is rooted in episodic experience. (However) meanings and general knowledge become disassociated from the context in which they were acquired" (Bahrick & Karis, 1982, p. 429). If informa-

tion does become disassociated from the original context in which it was learned, tracing knowledge learned on a field trip back to the specific moment of learning might prove difficult.

Long Term Retention. There is ongoing debate in the literature as to whether long term memory stores (episodic or semantic) are permanent or decay over time. The two competing theories are interference theory and decay theory. Interference theory basically states that memory traces or engrams are not lost, but rather access becomes confused as similar memories form. For example, the path that once led to engram A now leads to engram B, and engram A becomes inaccessible. Decay theory posits that memory traces or engrams weaken and disappear over time if not used. For a further discussion on decay and interference theories see Goldmeier (1982) or Tulving (1983).

Several factors have been found to enhance long term recall. Rubin and Kozin (1984) found that personally significant, emotionally involved, consequential, surprising, recent, and rehearsed memories were the most easily and vividly (in terms of level of detail) recalled. Thompson (1982) found that unique events were more easily placed in time than rehearsal enhanced memory. Bahrick (1984) found what he termed permastore for some memories taught in a Spanish class and found that most of the forgetting that did occur happened in the first three to six years after learning ceased. It appeared that concepts not lost after six years were permanently stored in memory.

The memory related literature revealed several possible outcomes for field trip research: (a) experiences that involved multiple senses might prove more memorable; (b) experiences that were rehearsed or

interconnected with existing information might prove more memorable; (c) emotionally involved and personally significant events might be more easily recalled; and (d) much of the information gained during the field trip might have become disassociated from the learning context.

Method

Subjects were 71 third and fourth graders from a rural, Midwestern elementary school. These third and fourth graders took an interpretive school field trip to a local park to learn about their local environment. The field trip interpreters followed a script that was divided into seven sections: (a) during the introductory section, the interpreters set standards and goals for the day, ran a game or activity, and set up a plant transpiration experiment; (b) the discovery section allowed students to collect plants, ask questions, and to discuss issues raised; (c) during the discussion section, an adaptation activity was conducted and students were guided through discussions on adaptation, the importance of plants, and plant facts; (d) the guided adaptation walk allowed students to discover plant adaptations, to locate manmade items, and to discuss adaptations and their functions; (e) after the walk the transpiration experiment was discussed; (f) the interpreter then asked a series of review questions; and (g) the students participated in a concluding game or activity.

The survey instrument (see Appendix) consisted of four open-ended questions and was completed by most respondents in less than 15 minutes. The instrument used a cued recall and a funneled approach so that the earlier questions would not prompt memories relevant to subsequent questions (Bahrick & Karis, 1982; Jobe, Smith, & Tourangeau, 1993). The survey was admin-

istered one month (P1) and 18 months (P2) after the completion of the field trip. At P1, 100% of the participants filled out the surveys. At P2, the response rate was just over 35%.

After the data at P1 was collected, two researchers coded the data into categories for content analysis. The two sets of independently generated categories agreed highly and additional discussions created a set of agreed upon groupings. These same groupings were used in the subsequent analysis of the data collected at P2. The high level of agreement between researchers working independently supports the validity of the emergent categories generated (Miles & Huberman, 1994).

Results

Results from the first two open-ended questions were combined during analysis. No consistent differences were found between the student's "most memorable" experience and "three activities that they did" while on the field trip. The combined results from questions 1 and 2 can be seen in Figure 2. Over 50% of the respondents at both P1 and P2, respectively, remembered learning about nature (54%, 68%), playing tag or games (72%, 56%),

and going on a hike (62%, 60%). The scavenger hunt, which was mentioned by 59% of the respondents at P1, was only mentioned by 20% at P2. The only other consistent categories included eating (6%, 12%), singing (15%, 12%), and taping one's thumbs together as part of an adaptation exercise (6%, 16%).

Question 3 asked if the subjects remembered a specific activity that the interpreter used to help them learn how a tree transpires. At P1, 37% remembered, while only 20% still recalled the activity at P2.

Question 4 asked if the subjects would like to return to the same park to learn more about plants, would like to go to another park to learn about plants, or if they would rather not go to any park to learn about plants. At P1, 79% indicated a desire to return to the same park, 7% indicated a desire to go to a different park, and 14% indicated a desire to go to no park to learn more about plants. At P2 the responses were similar; 79% indicated a desire to return to the same park, 13% indicated a desire to go to a different park, and 7% indicated a desire to go to no park to learn more about plants.

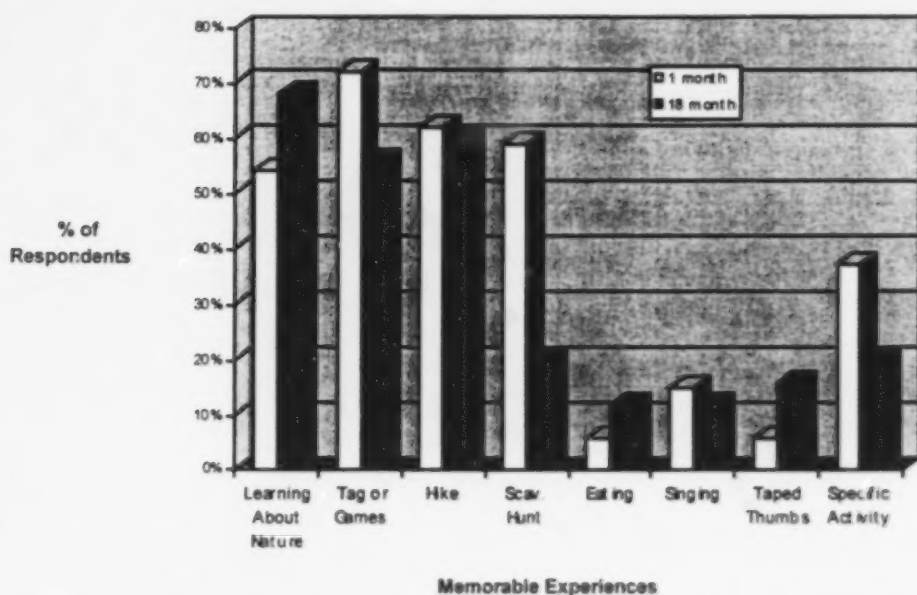


Figure 2. Summary of survey results.

Discussion

One of the limitations of this study is the response rate for the subsequent testing at 18 months after the field trip. In an effort to comply with the Human Subjects Board, each student was required to have a second informed consent signed by a parent and returned to their teachers (the initial informed consent was only for the survey administered at the 1-month interval). Many of the students felt that they remembered very little about the field trip and did not desire to participate in the second survey. Despite this low response rate, the data from P1 and P2 were generally in agreement, which would tend to indicate that the second sample was representative of the population.

Learning about nature, tag and games, and the hike were the three most remembered categories. Learning about nature was composed of general and non-specific replies. Representative comments included: "learning about plants," "learning about leaves,"

"learning about nature," and "learning about evergreen and deciduous trees." These responses could indicate that specific learned information has become disassociated from the field trip, or they could indicate that further probing was necessary to elicit a more detailed response. It is possible that students, knowing the general goal of a field trip to a nature center, recalled learning about nature as an obviously correct response.

While very few of the surveys contained specific references to what was learned about nature, many contained references to songs sung and games that were played. Responses included, "the treasure hunt we did" or "doing the taped thumb game". This supports the idea that activities that involve multiple sensations are more memorable. It is likely that these games and songs were both novel and emotionally charged, which would make them more memorable. However, additional probing would be necessary to determine if envi-

ronmental information was gained from these activities. Additionally, it was predicted that experiences that were rehearsed or interconnected with existing information might prove more memorable. While it is likely that this is the case, little support for this prediction was found.

Many of these responses suggest that this type of event-specific memory yields an incomplete representation of how a field trip is connected to memories and learning. If, as Tulving (1972) proposes, episodic memories can be transferred to semantic information, then when does the learning take place? If a teacher guides a student to remember a field trip transpiration activity during class, and this classroom instruction combined with the field trip forms a new understanding of transpiration, where did the learning take place? To add to the complication, if this new level of understanding becomes disassociated from the time and place of learning, then finding this connection between field trips and learning may be difficult.

Conclusion

Memories can be constructed, retrieved or destroyed. Episodic memories, associated with specific events, may be recalled and recoded as semantic memories. The latter tends to be associated with conceptual, independent knowledge. On the other hand, if information is not worth recognizing, the memory of that data may be discarded. Since knowledge retention has been found to be successful with interpretive programs, it is important to postulate: what does happen with knowledge immediately and subsequently following an interpretive experience? Are memories of the information and experiences related to the field trip episodic or does some of the information become retrieved as semantic memory?

This paper offered basic paradigms to begin the study of memories that were gained or lost through an interpretive field trip. Attempting to learn what if any of the experiences of this short event impacted semantic memory would be difficult. But this study is a first step towards discovering episodic memories that were gained from an outdoor interpretive program.

The one month and 18 month post-tests administered during this study revealed that memories were non-specific and disassociated from specific information given by the interpreter. In fact, most of the participants during both tests could not recall the specific activity that was used to associate transpiration – a concept reviewed during the field trip. However, results from both tests yielded positive response to returning to the outdoor site. This would infer that while not retaining specific objective-oriented content, students did gain a positive reaction to returning to the park that continued over the long term.

The researchers recommend further qualitative and quantitative studies to attempt to track specific information given during an interpretive experience. Do the memories of this information "decay" resulting in only memories of the experiences associated with the content implementation? Can specific resource site information gained from a field trip become associated with long term semantic memory? Are attitudes towards the resource site subject to change over time or do they continue to be strong as noted in this study?

Millions of students participate in outdoor interpretive field trips. Research has shown that they do gain knowledge about the resource site they are visiting as well as related concepts. Further research is warranted to learn what they remember about

these experiences, for how long and to what degree it enters into long term knowledge retention.

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Appendix**Thomson Park Questionnaire**

My teacher's name _____

Grade _____

1. Please complete this sentence: The thing I remember most about my trip to Thomson Park was _____.

2. List three activities you did during the program at Thomson Park.

a. _____

b. _____

c. _____

3. What activity did your program leader do to help you learn how a tree transpires?

4. Choose the sentence that best describes how you feel:

____ a. I would like to go to Thomson Park and spend more time learning about plants.

____ b. I would rather go to another park to learn more about plants.

____ c. I would not like to go to a park to learn more about plants.

CONTROVERSIAL ISSUES IN ADVENTURE EDUCATION

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The field of adventure education has grown rapidly over the past several decades, and with its evolution many critical topics for deliberation have emerged. In order for the field of adventure education to mature, we must continue to question and embrace controversy, for healthy controversy inspires re-examination and, hopefully, growth. Therefore, the time has come to identify the critical issues at hand and provide a forum to present them for inquiry. The book, *Controversial Issues in Adventure Education*, will address some of the most controversial topics in the field of adventure education. It will consist of 15 questions set up in a debate format where adventure education professional will present opposing viewpoints on each issue. The book will address a variety of topics such as gender specific programs, challenge course certification, mandatory debriefing, use of modern communications systems in the wilderness, and restrictions on wilderness use. Experts in the field will outline their arguments and provide readers with

important information on these issues. *Controversial Issues in Adventure Education* will be written for participants, undergraduate and graduate students and/or professionals interested in adventure education programs. The book will be particularly relevant to aspiring leaders in the field and those who embrace the concept of multiple perspectives in adventure education. Educators can use the book to set up classroom debates that will help students develop important critical thinking skills. It can also be used to help students identify and clarify arguments, examine why some arguments are stronger than others, examine their own personal values on various issues, and expand their views by examining both sides of an issue. Readers should keep in mind that the views presented may not necessarily reflect the authors' views. Rather, the text will be written with the intention of outlining the arguments, in order to promote critical thinking.

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PLENARY SESSION ON THE FUTURE OF RESEARCH IN OUTDOOR EDUCATION

Simon Priest, Ph.D.

Editor's Note: The CEO research symposia have always included working sessions on topics and issues of concern to participants. At the fourth symposium, the topic was no less than "the future of research in our field." Masterfully facilitated by Simon Priest, symposium participants alternated between plenary sessions and smaller working groups and sought to develop agendas and strategies that might advance our field in important ways. Pleased with the results, everyone asked Simon to prepare a summary, which he promptly did and distributed by e-mail. For the record, we conclude these proceedings by printing Simon Priest's outline-style summary of this productive session. (ABY)

FUTURE OF RESEARCH IN OUT- DOOR EDUCATION

Four groups broke up to discuss and summarize their preferences for enabling future outdoor education research. The groups chosen were: 1. Before the study (access to resources) 2. After the study (sharing & dissemination) 3. Bridging the gap between practitioners and academics 4. Moving beyond descriptive studies.

One desire that seemed to cross all four groups was for the development of an electronic connection (Andy Young and Simon Priest volunteered to work on this project). The electronic

connection consisted of two major parts: a discussion list and a website.

The discussion list was found to already exist and Simon Priest subsequently shared the new procedures for signing up via E-mail: To join OUTRES, send a message to <mailbase@mailbase.ac.uk> from the E-address that you will be using to send and receive messages on the discussion list. Do not include a subject entry, but make sure the text reads "join outres yourfirstname yourlastname" (EX: join outres Simon Priest). Further information will then be sent to you automatically (save these commands for future use, especially when leaving the list).

The website (viability being examined by Andy Young at Cortland) would contain postings on instrument usefulness, research designs, data sets, subject locating, funding sources, abstracted studies, and annotated bibliographies.

- A "pool" of instrument information would be categorized by constructs measured, and would include trustworthiness data for instruments borrowed from other disciplines and reviewed for their application to OE and related areas of study.
- A posting of research designs would be available for visitors to interact and share their thoughts on how to improve these designs.

- A "swap meet" would be set up for folks to post their offers of sharing data sets for secondary analysis or for others to leave their "wish list" of data collection. Readers might incorporate some of these wishes in their own data collection procedures and then share these sets, or might contact a researcher to collaborate on a secondary analysis of other sets.

- A "dating service" would be established to connect researchers looking for subjects and practitioners looking to have their programs studied. Researchers and practitioners would post their needs and connect to form study teams. Researchers could also list their areas of general research interest and practitioners could describe the specific kinds of programs they have.

- A listing of available grants and needed research would contain links to other sources. Researchers would be encouraged to contribute abstracts of their studies to a clearinghouse, provided these were presented in a common format:

HIGHLIGHT: one sentence about the most important aspect of the study.

REFERENCE: journal or presentation citation in APA 4.

PURPOSE: one paragraph about the intent of the study.

DESIGN: description of qualitative or quantitative study design.

TREATMENT: description of intervention or experiences involved.

SUBJECTS: numbers of people and their groupings or other arrangements.

INSTRUMENT: way data were collected (survey, observation, interview).

MEASUREMENT: frequency and/or conditions of data collection.

ANALYSIS: one sentence about the statistics or examination of data patterns.

FINDINGS: outcomes of the analysis with diagrams, tables or graphs.

CONCLUSIONS: one paragraph summing up outcomes in relation to purpose.

- A searchable database of annotated articles was suggested in the spirit of past paper publications. Translations of these summaries might also encourage more international involvement with outdoor research. Obviously a website this large and varied would require a simple search engine to make locating information within the various databases and bibliographies much easier.

Other ideas outside the electronic connection included having a "show & tell" of instruments and designs at the next Symposium with the production of a "green book" of instruments and designs as one possible outcome. The creation of a mentoring system to help new researchers and doing a "best of" Symposium Proceedings were additional thoughts that received support from the plenary.

The needs to look to other disciplines (for how they bridge gaps and conduct studies beyond the descriptive) and to do more replicative studies were common themes for several of the groups. One solution offered was to train research "producers" at conferences on how they might write with greater application content so "consumers" can better understand the studies. Partnerships between practitioners and researchers were viewed as necessary to ensure this happens.

Theory and model building was a key focus for one group. Clear needs

were outlined for integrated teams of researchers, with positivistic and naturalistic (or other) viewpoints of research. These teams, who can design and interpret from varied perspectives, would conduct studies (by qualitative and quantitative methods) to seek causality and interconnection. In this way, we could begin to build and test new theories and models. Such a multiparadigmatic approach using dualistic methods requires that we all examine the underlying philosophy of our research (why we do what we do, why we collect certain kinds of data in certain ways and why we ask different types of questions).

Simon Priest, Ph.D., retired professor and founding member of "eXperientia," a non-profit, international consulting consortium. (In Latin) "eXperientia" means conscious learning for life derived from purposeful reflection on direct participation in action events. E-mail: spriest@ups.edu

Lastly, we were all encouraged to establish our single lines of study (and to stick with these) so we can create personal track records in areas of expertise. The role of graduate students was emphasized (not as slave labor, but as valued learning experiences) and the need to market the value of research to others by engaging our professional organizations (AEE & ACA) to include summaries of the proceedings in their publications as special issues or editions was highlighted.

-NOTES-

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